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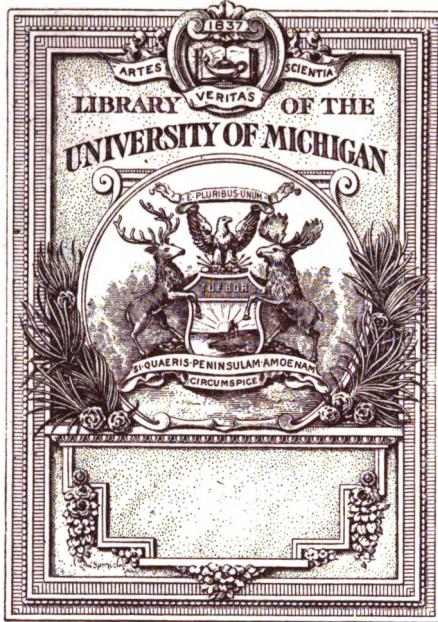
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ANNUAL REPORT
OF THE
MINNESOTA
State Agricultural Society
FOR THE YEAR 1906

CONTAINING:

SECRETARY'S REPORT TO THE GOVERNOR
PROCEEDINGS OF THE SOCIETY
BOARD MEETINGS
FINANCIAL STATEMENTS, INCLUDING AUDITOR'S AND TREASURER'S REPORTS
STATEMENT OF AWARDS AND PURSES PAID
AND REPORTS FROM DISTRICT AND COUNTY SOCIETIES

COMPILED BY
E. W. RANDALL, Secretary
STATE FAIR GROUNDS, MINN.

1907
HARRISON & SMITH CO.
MINNEAPOLIS

MINNESOTA STATE AGRICULTURAL SOCIETY

OFFICERS AND BOARD OF MANAGERS, 1906.

President—C. N. COSGROVE, Le Sueur.
First Vice-President—C. M. GRIGGS, St. Paul.
Second Vice-President—B. F. NELSON, Minneapolis.
Secretary—E. W. RANDALL, Hamline.
Treasurer—F. J. Wilcox, Northfield.

BOARD OF MANAGERS.

W. M. LIGGETT, St. Anthony Park.....	Term Expires 1907
WM. E. LEE, Long Prairie.....	Term Expires 1907
D. S. HALL, Buffalo Lake.....	Term Expires 1908
G. W. PATTERSON, Worthington.....	Term Expires 1908
J. M. UNDERWOOD, Lake City.....	Term Expires 1909
L. D. BAIRD, Austin.....	Term Expires 1909

SUPERINTENDENTS OF DIVISIONS.

A. Horses—G. W. Paterson, Worthington.
B. Cattle—W. M. Liggett, St. Anthony Park.
C. Sheep—J. S. Bangs, South St. Paul.
D. Swine—J. S. Bangs, South St. Paul.
E. Poultry—Leslie Parlin, St. Paul.
F. Dairy Produce—A. W. Trow, Glenville.
G. Horticulture and Floriculture—J. M. Underwood, Lake City.
H. Honey, Apiary and Sugar—J. M. Underwood, Lake City.
J. Vegetables, Grain and Farm Produce—J. M. Underwood, Lake City.
K. Woman's Department—B. F. Nelson, Minneapolis.
 Assistant Superintendent—Mrs. M. L. Luther, 523 Forest Ave., Minneapolis.
L. Exposition Building—B. F. Nelson, 107 Kasota Bldg., Minneapolis.
M. Manufactures, Machinery Department, Farm Implements, Carriages—
 Wm. E. Lee, Long Prairie.
Amusements—C. M. Griggs, St. Paul.
Gates—C. N. Cosgrove, Le Sueur.
Police—D. S. Hall, Buffalo Lake.
Forage—W. M. Liggett, St. Anthony Park.
 Assistant Superintendent—W. A. Peterson.
Privileges—L. D. Baird, Austin.
Collector of Privileges—A. C. Page, Austin.
Sanitation—W. M. Curtis, Howard Lake.
Grounds—E. W. Randall, State Fair Grounds, Hamline.

STANDING COMMITTEES.

Executive—Liggett, Underwood, Nelson, Griggs.
Reception—Patterson, Hall, Baird.
Auditing—Underwood, Liggett, Griggs.
Amusement—Griggs, Underwood, Nelson, Liggett.
Advertising—Hall, Liggett, Patterson, Lee, Baird.
Transportation—Nelson, Lee, Patterson, Hall, Griggs.
Tickets—Lee, Baird, Nelson, Patterson.
Privileges—Baird, Lee, Underwood, Hall.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING DECEMBER 10, 1906.

RECEIPTS.

Balance on Hand Dec. 10, 1905.....	\$ 75,277.65
State Appropriation	4,000.00
Stall Rent	2,028.46
Forage	2,132.85
Privileges	26,431.25
Races	11,243.35
Tickets	152,511.72
Rents	965.00
Official Program	3,720.00
Adv. in Premium List	631.70
Interest	1,438.23
Checks Returned	35.68
Account Refunded	52.78
Material Sold	174.95
Refunded on Lots Redeemed	133.62
Dividend from Allemania Bank	53
Special Premiums	2,251.00
Fines	156.25
Butter and Cheese Sold	1,008.25
Correction on New England Fur & Carpet Co. Acct.....	396.00
Total Receipts	\$284,670.47

DISBURSEMENTS.

Accounts of 1905 and Former Years.....	\$ 1,131.07
Attractions	26,216.93
Advertising, Stationery, Printing, Premium Lists, Official Programs, etc.	16,355.53
Forage and Fuel	2,425.58
Labor in Office and care of Buildings and Grounds.....	9,190.03
Salaries of Officers.....	7,400.00
Postage	638.00
Premiums	25,378.26
Purses	19,507.00
Superintendents, Assistants, Judges, Gate-Keepers, Ushers, Police, Ticket-Sellers,	18,458.71
Permanent Improvements and Repairs.....	80,911.58
Installation of Exhibits, Decorations, Lighting and all Expense Items not enumerated above.....	12,211.09
Balance on Hand Dec. 10, 1906.....	64,846.69
	\$284,670.47

The foregoing statement of receipts and disbursements for the year ending Dec. 10, 1906, with all vouchers therefor, have been examined and found to be complete and correct, and the balance on hand to be as stated.

Respectfully submitted,

A. SCHAEFER, Public Examiner.

ANNUAL REPORT Minnesota State Agricultural Society

FOR THE YEAR 1906.

SECRETARY'S REPORT.

In compliance with law, the annual report of the Minnesota State Agricultural Society for the fiscal year ending Dec. 10, 1906, with the report of the State Board of Audit, is herewith presented.

The State Fair for 1906 opened on Monday morning Sept. 3rd, and closed Saturday evening Sept. 8th. The attendance for the week, as shown by the report of the superintendent of gates was 295,263, an excess of 22,209 over the total of one year ago.

Attention is called to the report of superintendents of departments. These reports are worthy of attention. The work in each department is outlined,—the character of the exhibits; the name and address of those to whom awards were made; the number and amount of premiums; recommendations for the future, etc. As in other years, an expert in the particular industry represented has been at the head of each dpartment, giving its management personal attention.

Monday, the opening day of the fair, was a record-breaker. It was labor day and labor people of the cities and the state congregated upon the grounds in great numbers. James J. Hill, president of the Great Northern Railway, delivered an address dedicating the new live stock amphitheater and throngs of people came to listen to him. Dan Patch, the King of Pacers, was a special grand stand attraction for the afternoon and roused the keenest interset in his performance. All exhibits were in order and the amusement program was complete. Over 93,000 people were present, the largest number that ever visited the grounds in one day in the whole history of the institution.

The exhibits were high-class in all departments. There was growth in each department and large growth in a number of them. The machinery exhibits were the largest and most varied ever seen upon the grounds. Not more than half the swine brought for exhibition could be accommodated in the swine barn and temporary quarters had to be prepared for the over-flow. The poultry building also proved to be too small and a considerable number of birds were placed outside in tents. Space was at a premium everywhere and it was plainly shown that the fair has outgrown its equipment and that a number of new buildings are needed at once.

The amusement program also showed improvement. The race program was high-class throughout. There was an abundance of excellent music and an unusual number of interesting specialty features closing each night with Gregory's spectacular fireworks exhibition, "The Burning of Moscow." During the week 147,211 people visited the grand stand.

To indicate the steady and rapid growth of the Minnesota State Fair, the amount of ticket sales, total receipts (omitting balances carried forward from year to year) and the amount expended for permanent improvement and repairs is given for the last thirteen years. The amounts are as follows:

Year	Ticket Sales.	Total Receipts.	Improvement and Repairs.
1894	\$ 21,712.62	\$ 32,856.86	
1895	35,712.67	49,755.88	
1896	41,566.42	55,515.55	\$ 4,559.00
1897	30,634.90	48,580.30	2,041.79
1898	36,951.75	57,611.59	4,286.19
1899	52,070.45	88,711.91	9,725.30
1900	65,533.90	90,524.40	11,502.07
1901	87,072.15	113,835.63	17,576.19
1902	100,298.60	143,304.73	30,945.88
1903	113,079.15	160,433.02	47,098.02
1904	86,995.09	144,937.45	40,450.33
1905	134,736.85	192,794.75	32,967.55
1906	152,511.72	209,392.82	80,911.58

The Live Stock Amphitheater, needed for so many years, was built this year. It is 200 by 350 feet, with an arena 120 by 270 feet and has seating capacity of 6,500. Because of delay in getting tile from the manufacturers, the roof is not complete. When the roof is finished and paid for the cost of the building will be \$107,740.33. Of this amount \$50,000 was appropriated by the Legislature of 1905, the balance being

paid by this society. This amphitheater was a center of interest during the last fair and will in the future be of great value to the live stock interests of the state.

Bleacher seats for 5,000 people have been added at the grand stand; a speed barn has been built; the hotel upon the grounds has been completed and made fit for winter as well as summer use and other important improvements have been made. New roofs have been put upon a number of buildings and considerable painting has been done. The state fair equipment has been much improved during the year.

Respectfully submitted,

E. W. RANDALL,

Secretary.

ANNUAL MEETING

Minnesota State Agricultural Society

MORNING SESSION.**TUESDAY, JANUARY 8th, 1907.**

The meeting was called to order, and opened by prayer by Dr. Bridgeman, President of Hamline University.

President Cosgrove: I am sorry to announce that owing to the fact that the legislature opens this morning, our Governor is unable to be here, but he assures us that he will be sometime during the session, either today or at some future day of the meeting. We will omit the appointing of the committees for the present,—pass that over,—and will now listen to Mr. Elliott, the drainage expert from Washington, D. C.

I take great pleasure in introducing Mr. Elliott, from Washington.
(Applause.)

FARM DRAINAGE.**BY C. G. ELLIOTT, DRAINAGE EXPERT.**

Mr. President and Gentlemen of the State Board:

It has been intimated from several sources in this state that the farmers are much interested in the subject of farm drainage. It has often seemed strange to me that this most important subject, one dealing in such a direct and certain manner with the fertility of the soil, and exerting such an important influence on production, should be almost the last one to receive attention. Farmers have the reputation of being intensely practical in the conduct of their business and conservative with reference to innovations and the slow progress of agricultural science and practice in times past may be largely attributed to these characteristics. It is said of Sir Robert Peel, who was quite a historical character, and who figured in the English Parliament during the American Revolution, and who was also a patron of agriculture, that he presented two iron plows to the Duckworth Farmers' Club with the request that they give them a fair trial. Upon his return a few weeks later he found the old wooden plows still in use and in answer to his inquiry the spokesman of the club replied, "Sir, we have

tried the iron plows, and we be all of one mind, that they make the weeds grow." When John Johnston began to make under drains on his farm at Geneva, New York, in 1835, his neighbors lamented his folly and predicted his speedy financial ruin, because he had borrowed money from the bank with which to carry on this new and foolish work. The immediate satisfactory results, however, which he obtained from the fields which he drained, surprised his neighbors, and convinced them of the value of drainage to the heavy clay soils of that locality. Yet, notwithstanding this they were slow to follow his example. Landowners in the South today, who are depending upon foremen and superintendents for the management of their farms, complain that nearly every innovation they attempt to introduce is frowned upon and its failure predicted, and failure is not infrequently brought about through intentional neglect and mismanagement greatly to the loss of the owner and the discouragement of new practices among the neighboring farmers who watch the results with interest. Lord Scully, who had large landed interests in Central Illinois, persistently refused to drain his land though often petitioned by his tenants to do so; however, when after several years he found the neighboring farms bringing their owners one-half more rental than his own, he changed his policy, and a few years before his death began draining his farm in a thorough and energetic manner. During the inception of the tile drainage movement, which spread through Indiana and Illinois between 1880 and 1890, it was not infrequently difficult to convince some otherwise intelligent men of the wisdom of farm drainage. During this period Professor J. B. Johnson, of Illinois, the correspondent of the Country Gentleman, persistently attacked all attempts at thorough under drainage, and went so far as to attribute the prevalence of unusual storms, floods and drouths to that cause, and predicted that if continued, the orchards of Illinois would be ruined, and the state would become subject to drouths never before experienced. Twenty years have passed since this prediction was made, and yet none of the dire consequences have appeared. But on the contrary those portions of that state, in which drainage improvements were most assiduously carried forward, have become the most valuable and desirable farm areas of the middle West.

As an instance of the manner in which improved land drainage was regarded by some, I can cite an instance which came under my individual notice. The guardian of two minor heirs who had inherited a considerable landed estate in Illinois approached the judge of the probate court under whose counsel and jurisdiction he was acting and asked permission to use a portion of the funds of the estate in under draining the farms in his charge. He represented that adjoining lands which had been recently tile drained showed a handsome return for the investment, and that, in his opinion, no more substantial service could be rendered the heirs, than to improve their lands in this way. The Court emphatically refused, with the remark, that he could not permit the funds of the estate to be jeopardized by using them for such an unusual and unwarranted purpose. The guardian renewed his request the following year, armed with such convincing data upon the matter that the Court reluctantly consented to the drainage of one farm of a hundred and sixty acres as an experiment. At the end of two years the guardian made a report upon the results of the drainage of

that farm, which was so satisfactory and convincing that no objections were afterwards offered by the Court to the draining of any of the land belonging to the heirs. This occurred in 1882, when farm drainage was first receiving marked attention in Illinois. The estate consisted of about one thousand acres in detached farms, one of which was drained each year, until the entire estate was thus improved. At the end of ten years, when the heirs came to their majority, the guardian delivered the farms, which in the meantime had been well drained and substantially improved, and the annual rental doubled, and in addition to the lands thus improved, he turned over forty thousand dollars to each of the heirs as the accumulated proceeds from their property. These lands were, no doubt, naturally fertile and only required drainage to put them in prime productive condition.

There are epochs or turning points in the management of individual farms, and in agricultural practice, and in certain localities changes in procedure are sometimes imperative. Mr. J. H. Stackborough, the commercial and corresponding secretary of the Ohio Board of Agriculture, was urged by that board in 1860 to prepare a manual upon farm drainage, and after making a careful examination of the situation, he says, "The agriculture of Ohio can make no further progress until a good system of under drainage has been adopted." Such a time came later to the farmers of Indiana and Illinois, and has now come to those of Iowa and Minnesota. Epochs of a similar nature come to almost every farmer who is bent upon the improvement of his lands. He must change his methods and practice. He has cultivated the more favorable and the high spots, and those upon which crops can be most easily produced, and has avoided the ponds which occur in his fields. He has cultivated the low spots, where he loses his crop every second year, or third, and perhaps obtains only half a crop the balance of the time. He has contented himself without a crop on his low, marshy lands and his wet meadows. He has allowed certain of his land to remain in permanent pasture because too wet to cultivate. He has delayed seeding and cultivating for indeterminable periods whenever unusual rainfall occurs. Under such circumstances he sees the wisdom of making his entire fields productive, and changing his wet pasture lands into cultivated fields, thus making intelligent and profitable farm management possible.

The question arises, how and where to begin? How much will it cost? Will it pay, and other related matters? And with our hard-headed farmers these questions must be answered to their satisfaction. The most satisfactory method of removing surplus water from the soil is by under drainage, and right here I want to speak of what is meant by surplus water. A farmer speaks of dry soil and wet soil. He does not mean one that has no moisture when he says,—or when he speaks of a dry soil, but one that has a sufficient quantity to promote the growth of crops, and when this amount is exceeded he calls the soil a wet soil. Drainage is the removal of that surplus water which converts the wet soil into one which is moist, or, as the farmer then calls it, a dry soil. Now let me call attention to a few physical characteristics of the soil. In a dry state it contains a certain quantity of air. If you will fill a jar full of soil, and take it and saturate that jar of soil by placing water upon the surface and allow it to percolate through, covering the jar of soil perfectly, with water, you will find that bubbles of air con-

tinue to come to the surface, and unless they do this, the water will not penetrate the soil and fill those places. If you will make the bottom of the jar so that there is an open space for the air to pass from the bottom of the jar instead of from the top, then you will find none of these bubbles around the top. Now the drainage characteristics of the soil depend upon its physical structure, and by that I mean the arrangement of these particles of the soil. I would like to call the attention, I suppose, especially, of the younger portion of this audience, to a few of these facts, and suggest that they take into consideration some little experiments and personal examinations, in view of the fact that drainage does not depend upon the chemical constituents of the soil, or even upon the characteristics as shown by a mechanical analysis of the soil as given by the college, but upon the structure which you can see with your eye. These particles of the soil are thrown together in masses and some of our most porous and easily drained soils are those which contain large quantities of clay. If these particles of clay are moistened and rubbed together, it destroys that granular structure of the soil and makes it almost impermeable to water, whereas if you preserve that granular structure of the soil, the water percolates through it. There are some of these soils in our bottom lands called gumbo, that have the reputation of being hard to drain, in fact, it is said by some they cannot be drained, but if you will dig down below the surface,—we always puddle the surface when we cultivate it,—if you will dig down below the surface, you will find that granular structure, and as long as you can preserve that granular structure intact, the water will pass through the soil. Now a mechanical analysis shows the fineness of the soil, and the proportion of the sand and clay particles of the soil, but it does not show this structure which I speak of, and which is really a mass of those little particles together, in such a way as to indicate that there will be a large amount of space that the water will pass through, and upon this characteristic or property of the soil it is that under drainage depends.

I say that the most satisfactory method of removing surplus water from the soil is through under drainage, and this is especially true of the farm lands of the middle West where the annual rainfall is from twenty-seven to forty-five inches, and where the frosts of winter materially aid in pulverizing and subduing refractory soils. Clay tiles are the best for this purpose where properly placed in the ground to act as conduits for the soil water. Ideal drainage consists in removing the water of the soil through it instead of over it, in such a manner that the soil particles may be supplied with moisture while at the same time the surplus moisture passes away through the drains. The first effect of a rain is to saturate the soil, first the surface, and then successively each zone or layer downward until an impervious layer of earth, or what is called the water-table is reached, which prevents further downward movement. A drain operates first by removing the water near to it, and then permitting the continued downward movement of other water through the soil, and as it moves downward the air follows through the space formerly occupied by the water. This process does not affect the capillary water, or what is known as the soil moisture, which is that used by the roots of plants. This principle should not be lost sight of, because if we drain all the water from these clay soils, that are passed through them by

gravity, there is still enough held by capillarity to supply that which is needed by plants, so that in one sense it is impossible to over-drain soils having a large percentage of clay in them, or those which have a large capillary attraction for water. There are other soils, however, like a light peat, of which this cannot be said.

The first and most profitable parts of the farm to drain are the wet spots of the cultivated fields, those which interfere with the cultivation of the field and yield a full crop only in favorable seasons. The gain in crop yield here will be net, except for the added labor required in gathering it. There may be several low spots in a fifty-acre field, which if drained would make it uniformly dry, and the low spots would be as easily cultivated as the balance of the field and often yield more per acre. We will assume that some ditch or stream is within easy reach which will serve as a suitable outlet point, and that the flats or draws in the field are from one to three acres in extent. The natural method of procedure is as follows: Lay the drain from the outlet down through some depression in the field where the overflow water passes in flood time to and through the flats, extending the drains from one to the other until all are reached. This line should follow the lowest ground and it will usually necessitate following a winding course, but the turns should not be abrupt, neither should deep cuts ordinarily be made through high land which needs no drainage. As far as practicable the drain should be placed on the lowest ground. If the depressions are small, an acre or less in area, or it is a long narrow flat, one drain in the middle will accomplish the desired result. If the flat is two or three acres in extent, some additional drains should be laid, observing that they also be laid in the lowest ground, and extending a little beyond the lowest wet border. In all of this work we are only supplementing the natural drainage. You hear a good deal about making straight drains, and avoiding all crooks. After having had large experience in the economical management of drainage, I don't find that that is always a good principle to observe in a great many of our farms. As I say, artificial drainage is a supplement to natural drainage. That is all we do when we put in drains. We just help nature a little. There is a structure of the soil, especially in Southern Minnesota, in our alluvial soils, that we must pay attention to; and that is, that the water not only passes over the surface toward certain depressions, but it percolates through the soil, which occurs in layers, many of which are parallel with the surface. Where they are not parallel with the surface, we need to make artificial drains in order to supplement the natural structure of the soil. I have heard it remarked by those who have been draining the level areas of the Illinois bottoms, that it apparently makes no difference so far as the surface is concerned whether the pumping station be placed in the lower part of the valley or the upper,—it is level. The operation of the drainage is accomplished by making a ditch which will lead the water to the pumping plant, but it has been observed that there is what the farmers call a certain grading to that soil, by which they mean a stratified condition, that is at certain depths there is a trend along which or over which water will pass more readily in one direction than the other. We often find that by washing from the high land, the soil has been deposited in certain layers one after the other, and in that way assumed a

certain structure, and you must observe that in laying your drains. So, I say that the general practice in draining lands should be, especially the larger underlying main drains, and in fact all drains unless you wish to drain irrespective of distance, to lay your drains where the water naturally comes to them from the surface or through the soil, and so we may say as a general proposition, place drains where they appear to be most needed. These low places or swales, which are possibly only an acre or two in extent, may in reality receive the drainage of several acres of land surrounding them. And that should be considered in fixing upon the size of the tile to be employed. Where the entire area to be drained does not exceed fifteen to twenty acres, and it is moderately level, a five-inch drain with branches of four-inch tile will give very good results. However, if the land bordering the flats is what might be termed rolling, it will cause a more rapid accumulation of water upon the low ground, and a six-inch tile should be used. It should not be forgotten that the grade or the inclination upon which the drain may be laid, has much to do with its carrying capacity. Yet for the small field just described, it is not wise to use smaller drains than those indicated, even if the area drained is somewhat smaller. For larger projects, more careful attention should be given to properly proportioning the size of the main drains and the laterals which are directly responsible for the removal of the soil water. And here is another matter that we have found by experience, and that is, that carrying away the surplus water is not the only office of the drain; that there is a certain beneficial influence or effect which these conduits in the soil have; that water will flow more freely and that the soil will become in a better condition during the operation of these drains, if at the same time there is a current of air flowing through the drains with the water. So that I say, we should plan these drains, if possible, so that they will be under pressure or full only a short time, when they are most needed to carry away the surplus water. That is one benefit we attribute to using large drains throughout, so as to get the additional benefit which accrues from the air following the water as it passes from the soil. We also find that the bacteria of the soil are very much assisted in their growth and in their action when in soil that is devoid of surplus water, and that air or atmosphere in the soil is as much a necessity as fertilizer,—that it is a factor in the soil's fertility.

One important service rendered by drains, is to keep the soil water moving constantly. Stagnant water is always injurious to both the soil and plants, moving water much less so. Well-drained land may be covered with water and the soil saturated, yet if the movement begins at once and continues uninterruptedly until the soil reaches its normal condition, no serious injury will result to growing crops even, it is claimed, if the surface remains covered for twenty-four hours or more. This, of course, is not a desirable condition, but indicates the valuable service which adequate drainage may sometimes perform. We have seen this strikingly illustrated in many instances where an unusual flood or rainfall submerges land which is well under drained. I have seen fields of corn and oats when it was knee high and when the land was under six inches of water, and have heard the farmers say, "Why, my crop is gone. I have gone to all of this expense in

draining this field and now we have had this heavy rain and my ground is covered and my crop is ruined." But surprising to say, if those drains are in, and in operating condition, and are sufficient in number for ordinary purposes of drainage, that water begins to recede, and recedes constantly, and the crop continues to grow. The water gets down to its normal condition, and the crop grows on as though it had scarcely been covered with water at all. I have seen corn one foot under water, not the tops of the corn plants, but the ground covered with water one foot deep,—and you have perhaps noticed that you may have a stream of water running through a meadow, and yet the clover or the timothy will grow well for some time under those conditions, whereas if the water is stopped in its movement and becomes stagnant, how the crop will soon be destroyed. Now with field crops we need not be discouraged, if unusual floods sometimes produce these conditions, and for that reason, I might add, that we should provide some overflow and escape ditch by which an unusual flood of waters could pass away, in order to relieve these under drains at extraordinary times.

If the drains are laid in clay subsoil they will operate satisfactorily, provided the tiles are laid accurately. One inch fall in one hundred feet is sufficient where there is a good clay bottom which may be worked to an accurate grade. If soft material or fine sand is encountered, a grade of two or three inches per hundred feet should be used, if possible, especially where the tiles are as small as four or five inches in diameter.

This one thing of the grade of drains has retarded the progress of drainage in the West for over ten or fifteen years; for it was taught in the eastern books by those well versed in English drainage that a certain minimum grade for the drains was absolutely necessary to their success, and that minimum grade was placed by our eastern people at three inches per hundred feet, or a half an inch per rod. It was stated that unless you could obtain this, you need not expect your drains to operate successfully, and it is only when necessity obliged those of us in the West to break over this rule and to experiment along untried lines that we found that it was not true. I remember very distinctly the first time that I laid a drain with a grade of less than three inches to the hundred feet. It was two inches and I cautioned the workmen to be very careful about its construction, as I could not be sure that it would operate successfully, but it did, and after that I laid many miles of drains on a grade of a half an inch or five-eighths of an inch to a hundred feet, and they have been operating for eighteen years, and have been perfectly satisfactory. But it is in this fine clay which can be graded to a line as accurately as the workman can plane his board,—can make a straight edge to his board,—it can be done and is done, and when the drains are laid in this way, they may be laid almost absolutely level and operate satisfactorily and be permanent, though, of course, it should be understood that they will carry comparatively small amounts of water, compared with those which have a heavier grade.

The cost of the drains on a field should be charged against the entire field. If the cost of draining a wet place was a hundred dollars, and there were fifty acres in the field, thus costing two dollars per acre, though only five acres have been directly affected by the work, the benefits are the lessened expense in cultivating the field, the gain in production, and the

increased facility with which the farm may be managed. And then there is that other benefit which appeals to every farmer who takes pride in his vocation, and that is the pleasure derived from the sense of having made an unsightly place fruitful. This has to do with rural aesthetics, but it is not infrequently a tangible asset to both the farmer and the community.

The history of improvement in farms and drainage is as follows: First, the meadows are cultivated, and then successively drained as the time and means of the farmer will permit. This is followed by opening ditches and watercourses so as to permit the drainage of small marshes or slough lands. These involve the landowner in more expense, and a year or more of time is required to convert them from their wild state into productive fields, and in this way every acre of the farm is made to bear a portion of the expense of reclaiming the wet lands which are made productive, and the expense of the drainage is usually returned in from one to four years.

Porous ware is sometimes recommended upon the assumption that water is absorbed and passes through the pores of the tile, but it has not been shown that any appreciable quantity of water will pass through the most porous tile when under no greater pressure than it is subjected to in the soil. The fact that there is no resistance to the water entering the joints is sufficient proof, as the water would enter the drain through these joints rather than the pores of the pipe. Some porous tile, though not all, are unsafe to use because they are too soft. The tile should be well burned and hard, though it need not necessarily be vitrified. The hard burned red tile, which will ring when struck together, are considered good and durable; they can be made from plastic clay which will dry without warping, and burn to a high degree of hardness.

Their cost at northern factories is quite reasonable, being about sixteen, twenty-two and thirty dollars a thousand for four, five and six-inch tile respectively. If shipped a hundred miles by rail, the cost will be increased thirty per cent; if shipped four hundred miles the cost will be approximately doubled.

The depth of farm drains laid in open soil should ordinarily be about three feet. If the soil is largely porous, which will settle considerably when cultivated, the drains should be four feet deep, in fact this depth may be considered the standard for many of our alluvial soils. Where the soils are a fine clay, close in texture, two and half feet has been found to be a satisfactory depth. It should be remembered that drains serve the soil and plants in times of drouth as well as in wet seasons. During the season of rains the soil usually occupied by plants should be friable and receptive of moisture from the atmosphere, and in a condition to conserve the moisture brought from below by capillarity. It is well known that the roots of cereals extend six feet or more downward in search of moisture, but when moisture and plant food are within a convenient distance they confine themselves to their natural root habitat.

In my experience three feet deep, taking into account the cost of the work, is about right for field crops; for orchard and other special purposes, four or five feet would be more suitable. You will find, however, a great difference of opinion upon this point of the depth of the drain. I think it all depends upon the character of the soil; its physical structure, and in a

measure to the use to which you wish to place the land. In the first place it costs from a third to a half more to construct a four-foot drain than it does a three-foot drain. In many instances our soils are not uniform, and even in the same farm, the same depth of drains would not serve each field alike equally well, so that there is an opportunity for a very close examination and analysis of the field and soil conditions which each farmer should take upon himself to make. We cannot follow any fixed and fast rule for drainage all over this country. We find so many different conditions of climate and soil, and structure of soil, and even the habits of plants are different in different climates, so that I know no better way than for each farmer to acquire certain principles which pertain to this work and to go to work on his own farm and work out his own problems. If there are any experiments to make, let him make them, but let him conform to some general well-established principles which must prevail in all lands, but which must vary in different places.

Now the distance apart of drains. On level lands, and the manner of doing the work is a subject for discussion. Those who are the actual cultivators of the land know the wet conditions, and know the permeability of the soil, in the different localities, and upon this property,—upon this stratified structure largely depends the distance apart of the lateral drains should be placed to give thorough drainage to moderately level lands. Throughout the central part of New York the drains are for the most part forty feet apart; the seed farms of D. M. Ferry, near Detroit, Michigan, have tile drains thirty feet apart; the John Johnson farm, at Geneva, New York, has drains sixty-six feet apart; land in the corn belt of Illinois is drained with drains from a hundred to three hundred feet apart; the heavy black gumbo soils of Kansas, Nebraska, and Iowa have drains from eighty to one hundred feet apart. It should be observed that much so-called thorough drainage in Indiana and Illinois is really random drainage, or drainage of the wet portions of the farm, as previously described in this paper. As a matter of fact may farms have been drained in this manner at a cost of from six to ten dollars per acre, if charged against the entire farm, when fifteen or twenty dollars per acre was the cost to the land actually treated. Our Western farms, with the exception of the close clays, will respond to drains placed from a hundred to a hundred and fifty feet apart, which generally speaking may be considered the representative distances to use. Here again is a subject for close examination and experiment on the part of the individual farmer.

In connection with the work of our office, that of drainage investigation at the Department of Agriculture, we have occasion frequently to examine soils with reference to their drainage facilities. We have been in some places where it was formerly asserted that the soil would not respond to tile drainage with under drains, that they had tried it. I know of one farm in Kansas where the tile had been shipped in and a portion of them laid, and the results studied carefully, and they found nothing commendable at all. They piled up the tile in the shed and hung up their spades and quit. Another manager came upon the farm, and he wanted to know if this land couldn't be drained. It was my privilege to look over that soil and we dug down into the ground, and it was this gumbo,—this river bottom

gumbo, which is exceedingly sticky when wet, but as you know, who are acquainted with it, if exposed to the frosts, and the winds and the summer sun, it disintegrates and becomes very fine, so much so that when dry, it would blow around like dust, and would drift as snow does. And yet they said this soil will not drain. We found in the soil little grains about the size of grains of blasting powder, black grains, that separated just as nicely as possible, when thrown out upon the surface, but if they became wet and you rubbed them together they would stick and form balls as hard as bricks. Those little grains are covered with a film of water, and it would be interesting for you to examine them sometime and touch a piece of blotting paper to those little grains. It takes that film of water off and changes its appearance at once. This water is held in this film around each grain, from the larger particles down to the smaller ones, and that is what we call capillary water. That water will not flow away by gravity. And it won't leave the soil except when it is drawn up by the plant, or when it is drawn from one particle to another by the force called capillarity.

Now to prove whether or not that soil could be drained our department laid out a system of drains on eighty acres of land, and persuaded the owner to place them as we directed. That was done late last year, and one crop has been raised with most satisfactory results,—most satisfactory results have been obtained. The land, which the year before produced only five hundred bushels of corn, the manager told me produced two thousand bushels this year, with the season no more favorable than it was the year before. The result of that is, that they are going on and draining the entire farm, which was of that kind of land. The same thing is being called to the attention of the owners of the bottom lands of Mississippi. There are large quantities of gumbo lands there, yet with proper drainage and also proper cultivation and care those lands may be fitted to produce any of the crops which are adapted to the climate and the soil.

Much of the efficiency of drains may be lost if they are poorly constructed. There is much difference of opinion as to what is good work. One quite prevalent being that if the water runs freely from the drains, it is serving its purposes as well as possible. In the early part of my experience in drainage great care was taken in adjusting the grades of drains, and having the tiles laid with the greatest possible care. Every drain was laid to a careful survey, but in the course of time expert ditchers invaded the fields asserting that they could lay drains for water as accurately as could be desired, and as efficiently as if constructed by a survey, and much work of this character was done, which was apparently satisfactory. It therefore occurred to me that possibly I had been over particular in my surveys, and too zealous in advocating the superiority of accurate work in laying drains. But in time there came floods which put the drains to a severe test, and the cry went up, that all the drains were too small, and many of them useless. At this time the drains, which had been carefully planned and executed, and had been accurately adjusted as to grades, showed their superiority. The fields which they served were more quickly and uniformly relieved of their surplus water than those where less care in planning and in the execution of the plans had been observed. And after watching the trend of practical drainage for a number of years, I returned to the views with which I started

out, that it is best to lay under drains in the best possible way. While the best work may be done under careful surveys made by one who understands the practice of the art, I am not prepared to say that excellent work may not be done in many instances without such surveys. In any event it should be remembered that drainage is a permanent work, which, if well done, will last indefinitely. I have a little verse written to describe the office of the tile drain.

"Here is my great beauty, I am always on duty,
I will have reached my greatest powers when you are in your grave;
I will continue to slave for your children, their children, and theirs."

I have offered here only a few suggestions upon this hitherto much neglected subject. There is a large work of drainage, that of public drainage, draining large areas of waste lands, and converting idle lands into productive farms. This involves great engineering problems, yet the starting point of all successful drainage, is the drainage of the fields upon the farms already occupied and cultivated. No large, extended drainage projects can be carried out until it is shown that it pays to drain the fields and waste lands upon the farms already occupied. A progressive planter of the South remarked, in discussing methods of promoting farm drainage in the South, "If I can persuade one man in a neighborhood to drain one acre, I have presented the most forcible and effectual argument upon the value of drainage." No more important matter than the one we discuss can engage the attention of any farmer who owns land susceptible to drainage. The soil is the source of his prosperity, it is his capital, and he should not begrudge to it the little artificial drainage that may be required to make it yield to him and his descendants an ample return for the labor put upon it. The man who dwells upon the land often thinks himself commercially wronged, yet he lives near to nature's heart, and enjoys her gifts at first hand. Every movement in the interest of healthful living and bountiful production, and the amenities incident to a happy and contented life, may properly originate with the intelligent agriculturist of modern times.
(Applause.)

Mr. Cosgrove: As we are to have another talk on this same subject, I think it would be well to defer the asking of questions until after the conclusion of the next speaker's address.

I take great pleasure in introducing Mr. Meyer, of St. James, Minnesota.

FARM DRAINAGE.

BY FRED W. MEYER, ST. JAMES, MINNESOTA.

Mr. Chairman, Ladies and Gentlemen: After hearing this most wonderful address here on tile drainage, I almost feel as if I ought to lay my paper under the table. But I am going to show you what my under drainage has done for me in this State of Minnesota, in Watonwan county. I have noticed that Mr. Elliott here has said a good many things that I will have to say over again. Yesterday I delivered a little address, read a paper before our college boys,—University boys as you might call them,—and I had a

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little plat made of my farm showing how I laid my drains. They promised me that they would have that blackboard over here, but I see they have failed to get it here, so I can't show you how I laid them, but I will have to describe it to you.

Having been requested to address your meeting in regard to my experience, and the benefits, etc., which I have received from my underground drainage, I must first describe to you my farm. My farm consists of three hundred and eight acres, in the county of Watonwan, Minnesota. The northwest part is very low and flat and has two lake outlets through it which gives me a good outlet for tiling. Through this flat I had two ditches made, open ditches. The tops are seven feet wide, sloping to sixteen inches at the bottom, and three feet deep; the entire length of the ditches is two hundred and eighty rods, and they cost me two hundred and eighty dollars. This flat takes in about forty acres; the northeast part is medium rolling and has several high knolls and some gullies; running up east of these knolls are some deep sloughs, which are now all well drained. The south part of the farm is mostly flat, except a few small knolls close to the ravine and a lot of sink holes here and there. This farm, I understood after I bought it, used to be called the "slough farm on top of the hill." When I bought this farm in 1896, it was perfectly dry, and I noticed the fine flat lay of it and the good outlets it had in case I should ever have to ditch it. I was told when I bought this farm, "Meyer, you never need to put any tiling into this farm,—this ground here in Minnesota is awful porous." Well, I found out to my regret it was entirely different. I moved onto this place in 1898.

In the spring of 1899 I saw my neighbor on the west side "mudding in" his wheat, having three good horses hitched to an eight-foot seeder. "Why," said I, "Mr. ——, is this going to do you any good, such farming?" He said, "Yes, Mr. Meyer, you must be early in this country or you will get left entirely." I said, "If that is the way I have to do, I will move back to my old State of Illinois." I was completely out with the State of Minnesota. I went to town and laid my grievances before the president of our First National Bank, who tried to cheer me up a little and said, "Oh, you will get over this," but I said, "I don't believe this country is at all what it is cracked up to be. It is entirely too wet and the only remedy that I see that will help us out is tile drainage." He said, "Meyer, don't be so foolish and throw you money away. We will surely have some dry years again, and your investments won't be making you any interest at all, and besides see the damage you do to this county, you spoil your land entirely, and then you can't raise anything in a dry year." I said, "Thomas, I will tell you what I will do. I will try it anyway, and if I have success, which undoubtedly will follow, you fellows will change your minds pretty quick and follow me." And right here I want to state that I have had good crops on my tiled land seven years in succession, and have as yet failed to see it too dry, and as to my investments being unprofitable, on the contrary I have stirred up this country of ours until tiling is all the go, and our county is putting in four big ditches. One of these will be twenty-three miles long, and will all be tile except the lower part where the outlets are. The total cost of this county ditch will be forty-three thousand dollars.

I am also glad to state that the foundation for a concrete tile factory is laid, which will be run day and night, and manufacture six thousand tile and dry them in twenty-four hours. This association has invested quite a large capital in two steam ditching machines for excavating tile ditches. I met the president of this association on Hennepin avenue this morning, and I asked him how much those machines cost him, and he says one cost him twenty-five hundred dollars, and the other one fifty-six hundred dollars. The hind wheels of the big machine will be, I think, nearly eight feet wide, so they can go through a pretty good slough.

In the fall of 1899, I did my first tiling on the northeast corner, which I have described to you as having a slough back of some knolls. This eyesore or slough, laid close to the main public highway, and while the work was in progress I was confronted with all kinds of amusing questions, such as, "Won't these pipes freeze and burst?" "How is the water going to get into them?" "Don't you have to stand some of them tiles ends up, to get the water in?" "If you take the water out of this slough, don't you think you will make it too dry?" and all such questions. After I had the tile in and covered, I broke this slough up the same fall, and in the spring of 1900 I disked or pulverized, we will call it, this piece seven times, and planted it to corn on May 12th; I got an excellent stand and husked over sixty bushels of fine corn per acre from this piece. The first year's crop paid for the entire cost of tiling. The next year I put it into wheat and seeded it down to pasture. This tract comprised about twelve acres and has been a great object lesson to the passersby. This year I took close notice as to what that small pasture would keep, and how it would hold out. I pastured on it, sixteen head of sheep, twenty-eight lambs, twelve spring calves, and one mare and colt. It is now in white clover, red top, and our favorite quack grass.

On the extreme north side of my farm I had a sixty acre piece with ten to twelve sloughs and a water draw through it, which I had in wheat in 1899, and my total income from this sixty acres, was \$255, exclusive of seed, twine, and threshing accounts. After tiling these sixty acres, I ploughed the same in the fall and put it into corn about the middle of May, and harvested about twenty-four hundred bushels of corn from it, which I sold for twenty-five and a quarter cents per bushel. The tiling cost me two hundred and forty dollars, so you will notice that taking the preceding year's crop and cost of the tiling, I had about a hundred dollars on the credit side of my books. Both seasons were equally wet. All told, I have about twenty-five thousand feet of tiling on my place; the total cost is about fourteen hundred dollars, and this is the most valuable improvement to any farm, and if well done, it will last for generations.

Now, I will give you my observations on this farm. I took particular notice because I was the first one tiling there, as to how these tile ditches would act in the winter time. In Illinois, and in the southern part of the United States, Mr. Elliott says the tiles are all right because they will work all right, but in this country they told me, "They will freeze up, and don't do you any good." So I marked this very day when I first took notice that the ditch was doing its work. On the third day of March,—I remember it as well as though it was yesterday, because it was on a Sunday afternoon

in 1901,—I took a stroll down to my outlets, to see if I had to clear the snow drifts and ice away, so as to give the water a clear flow when thawing began, and to my great surprise found the ditches running about half full of water, and the water had cut its own way through the drifts and ice. You see this was something new to me and a mystery how the water could get into the tile below, as the ground was frozen three feet deep. On examining it I found that the water had found its way down through the frost cracks and crawfish holes. Now I noticed something that didn't occur in Illinois. We noticed here it keeps on continually freezing. But there we oftentimes have the frost penetrate the ground six or seven inches, and then we have a little wet time and that thaws out, but here it keeps on freezing in the winter time continually, and as it freezes down a couple of feet or two or three feet, you notice the ground breaks open. Since that time I have taken very close notice of this, and I find that the tile will discharge water as soon as it thaws a little in the spring. And the tile will keep on running off water in the fall and winter until the subsoil is dry and the surface freezes up.

Now here is something that I noticed the other day,—last week Thursday. I have described to you that I had two open ditches through that flat. Those are the outlets from my tile,—I laid my outlets right into the ditches. I was hauling some hay up to the barn, and in driving over the yellow gravel over this tile, I noticed the water wasn't frozen, and I says to my son, "Well, I believe those tile are running yet," and he says, "I don't think so." I says, "I will take my fork and go down," and I went down there, and found the ice above the outlet about eight inches thick, and where the tile runs in I could take my fork and break through this crust of ice, and I found the tile running. Now that bears out my assertion that the tile will keep on running through the winter time.

I would advise every farmer in this state to drain his land, for land is getting too valuable to have any unproductive acres, and if wet acres are made dry it makes a uniform field throughout, as the previous speaker told you. Now, here is about the same thing that he said: Tile drainage is a good permanent investment, and when properly completed will return to the farmer a greater rate of interest than any bank or stock company can offer, for we must consider that one dry acre is worth two or three wet ones, and if the wet acres are made dry by tiling, they are the best and most fertile acres.

The consideration of the cost of drainage should not be considered at all, for the increase in the crop will pay the expense within two or three years, and oftentimes in one year. Tile drainage makes the soil firm, the surface friable, enables earlier cultivation in the spring; low ground drained can be worked earlier than high ground not drained; it is several degrees warmer, consequently it promotes germination faster; it is easier to work, and always stands drought best, as the circulating air through the tile cools the surface. Drainage prevents floods and washing away of the top soils, is preferable to open ditches, leaves the fertility in the ground instead of running it off, and it does away with irregular fields cut up with sloughs or open ditches.

Now here is the same suggestion that Mr. Elliott made to you. Get a good engineer to lay out your system. If you aim to do some tiling, go at it systematically, and get a good reliable drainage engineer to plan your system for you. Make your main ditches and sublaterals large enough to carry all the water, even if you can't put in all tile necessary now, for you will surely do it later on. Run the mains as straight as possible through the lowest wet places, and if you have any deep, wide sloughs, lay some extra branches about seventy-five to a hundred feet away, and parallel with the main, so as to intercept the water. Now if you have a good grade of fall throughout, lay your tile on an even grade from the outlet to the head of the last branch. Should you have but little fall, let the lower part have the least, and give the upper part the most to push the water along faster. Let your branches come into the main at an angle about one or two inches from the bottom of the main.

If you have any gullies where the water falls down rapidly from elevated spots, lay a large-sized tile up into that, and make some kind of a catch basin about where the water collects to flow down. This basin should be made large enough to take all the water in which comes. It can best be made by filling the tile ditch with little stone, tile bats and coarse gravel, so as not to obstruct the farming over it. Begin work always at the lower end called the outlet and lay your tile straight out, packing a little dirt,—a little black dirt or fine clay alongside and over the tile to hold them in place.

Now I am ready to answer questions and have taken the liberty of proposing a few which are of importance to this subject.

Is it necessary to have a surveyor to plan your system of drainage and make surveys for you? I say no. If you are sure that you will have fall enough you can save the expense and you can also plat your fields best yourself. Now, in our country, I have some rented land to oversee, and most generally I get those renters to kind of look up those low spots in the field for me, and have them go through the fields and lay out those ditches themselves, because they know which way the water runs. Let a stranger go onto your farm and he sometimes thinks the water runs uphill. You let a stranger do that and you will have that experience. You will have had that experience if you ever drained. Of course, if you don't tile drain, the water just keeps flowing on—it always does that. Now here is where I say a man can plan his own system best, for he is acquainted with his land, and he can lay it off, and measure it off, so to speak, and put in his own hub stakes and numbering stakes, and when the surveyor comes, all he has got to do is to go with him and hold the staff for him, and he can thus save four or five dollars, because a good surveyor generally commands five dollars a day and travelling expenses, and you can save that.

Do you have to lay the tile below the frost line, so that they won't heave and get out of place? I say no, for it is not like a fence post or a foundation to a building. You see the ground freezes and thaws from above, and consequently the frost has no effect, the soil being drained is dry around the tile. The water keeps on running in the winter time and your soil is perfectly dry. As soon as the frost leaves the ground a little below the surface then the tile begins to discharge water and draw it out of the ground, and then your ground is dry.

How deep would you lay your tile to get the best results? Mr. Elliott stated here about three feet. I have the same answer. I would like to lay them three to four feet under the surface where there is a good clay or porous subsoil; in some sticky quicksand sloughs, I should like to get closer to the surface, so that I would get eighteen to twenty inches of dirt over the tile.

Now I will give you a little experience of my own. I had a slough in the middle of my field, that had about three or four acres in it. It was a little bit on the flat order. When I came to go through it with the main,—it was under the surface about four and a half or five feet deep,—right on the edge of it, my ditcher found a little patch of quicksand. We boarded that up and went through it all right, and I thought that would be satisfactory, that that would be enough to lay that right alongside the edge. In the spring of the year I found that the water couldn't get through that sand. That the sand kept it back and kept it wet all the time, so we went to work this last summer after I had the corn planted, and laid extra branches about two feet under the surface. The idea of that is that I want to catch that water and have it get into that tile, so as to get rid of it on the surface. It takes too long for that water to go down five feet through to that main, so I put some branches in there, and now it will be all right. Of course, you don't want to lay them too awful deep, because you see the frost is not down there,—you are too far away from the frost line, and they won't do as good work as if they were up a little higher, especially in the spring, and that is when we want to get the benefit of our tile. In going through a large slough where you have to lay some outside branches, as I have described to you, then you should lay the outside branches to intercept the flow of water from the hills. Some of these elevated spots that I referred to, and such as I could show you if I had my blackboard and some chalk, but the boys fooled me a little bit. In going through a large slough where you have to lay outside branches, and you cannot get into a good clay bottom,—it is hard to get a clay bottom in rushy sloughs, but if you go down three or four feet you get a good bottom anyway,—my advice to you is to either go closer to the outside of the slough with the main tile, or lay the tile up to the center of the slough and then stop and wait a year or two until the bottom of the slough has settled, and then proceed with the work. I have read articles where they did the same thing, they just laid temporary tile through the slough and dried it out, and took them up again and laid them deeper. I had the same experience. I went through a kind of clay hill into a rushy slough, and I dug the ditch and the tile were laid all right. I had two and a half inches fall to the hundred feet, and the second year I had those tile in there I found they wouldn't work. I went down there,—dug down, and found that the frost had injured those tile, they settled and the water stood in there and couldn't get out. The water was two feet deep and it froze and bursted my tile. Of course I had to remedy that.

Will tile be obstructed and get clogged in time? No, not if properly laid and the fall required given.

How many years' experience have you had with tile? Twenty-eight years ago, I saw the first tiled field in Illinois, and know that this field is commanding good rents today, and is in as good order as it was at that time.

How much labor will it require to keep tile ditches in order after laying? Not any, for I claim and said, if properly completed, the ditches will stay completed.

How can you detect the defective places in your tile ditches? Now, sometimes your tile ditches will get out of order. If it is close to the outlet, the water will burst out at the surface and flow on. If further up on the tile, you will notice the lower part of the field is dry, and the upper wet. Dig down to the tile, see what is the trouble and fix it up as soon as possible.

Have you ever noticed holes washing in over a tile ditch? I say, yes. I have had wagon loads of ground washed away through one inch cracks over the tile where the tile ditcher probably neglected to cover this with a small bat. I have dug down to those places and found the water flowing nice and clear in the ditch, put some tile bats on the opening, covered it up with ground and filled the ditches again. The washed away dirt I found at the outlet. You see that is what happened to me last summer. I was cutting a timothy meadow, and I didn't notice there was any hole, and all at once my horse went down, clear down to the tile. The black dirt had been washed away and the sod had stayed there. Well, the tile ditch was in good order, but the tile ditcher had neglected to bat the crack.

How many years will tile last? I couldn't answer this question at all. Mr. Elliott is handy here, I would like to have him answer this question, as to how long experience he has had with tile.

Mr. Elliott: I just want to say a word or two on that subject. I want to allude to the first tile that was laid in this country by John Johnson, of Geneva, New York, in 1835. Those tiles, as you may know, were laid upon a farm at Lake Geneva, and have been operating ever since. I had some correspondence with the present owner of the farm only three years ago. He said that the tiles which were laid by John Johnson first in 1833, and then on in 1848, were operating perfectly upon that farm, and that during the wet season which he mentioned,—I think it was 1901 or 1902,—he was able to drive with a heavy reaper over the land and reap his wheat, while his neighbors were not able to, but were obliged to cradle their wheat. He asserted that he had found that those tiles which were first made were primitive. The first ones were moulded by hand over a stick and poorly burned and laid without a bottom. Some were laid on boards and later flat bottomed tile were used, but he didn't know of a single tile,—a single drain,—but what was operating perfectly. That the tile wherever he had examined them were intact and whole, not injured by frost and not decayed, or in any way destroyed, so that that is probably the oldest example we have in this country. Now I will say that the English people assumed that tile would operate for at least fifty years,—would last and operate fifty years. The English Parliament at one time granted a loan to estate owners to assist them in draining their lands, and they acted upon that assumption, and extended the payment of these loans over a period of fifty years, and a great sum was paid out at that time. Those tiles were put in in 1806 and later, and as far as I have any knowledge by correspondence and otherwise, the tiles were in as good condition at the expiration of that time as when put in, so that they are practically indestructible and everlasting.

Mr. Meyer (continuing): The question is here, why do you advocate tiling so strongly? Because I asserted and said that one good dry acre is worth more than two or three wet ones, for the expense of working is less, and consequently it saves horse flesh, so to speak. Will cite you one instance that will prove this, and could name you dozens more like that if time would permit.

A year or so ago after I had had great benefits from my tiling, I urged my neighbors to go and do the same thing, but some of them would call me a crank. Some said, "All you know to talk about is cream separators and tiling, that is all you know." So one pretty loud-mouthed fellow, who always knew it all, says, "I don't care, I am going to use my land the way the Lord provided it for me." "Well," I says, "I am going to help him better it." (Laughter.) So he put in a hundred and twenty-five acres of oats, and I put in sixty acres of oats. And after harvest I was awful inquisitive,—because this hurt me a little, calling me a fool and a crank on tiling, and I was awful inquisitive as to what his yield could be. So I asked him one day, and he said, "Fred, I will tell you. Pretty good this year, I am satisfied, for you know, Fred, we had an awful wet spring, and at cutting time some of my oats was in water yet; lots of places the weeds took it; some places it did not pay to cut it, and while I had bad luck, killing two of my best horses trying to cut the poor spots, I thought the best way would be to quit. I am satisfied, I thrashed 3,760 bushels. You see this is about the average crop in this country anyway." Now, gentlemen, if you will read the statistics prepared at Washington, you will find that our averages in Minnesota are pretty low. I heard it stated by a speaker last night,—of the Society of Equity, wasn't it,—that the average yield for the State of Minnesota on wheat was seven bushels to the acre; in South Dakota, it was eleven bushel, and North Dakota, thirteen bushels. Now, you see here we ran thirty bushels of oats to the acre. Mr. Parker over at the Experiment station figured it out yesterday, that if we raised thirty bushels of oats to the acre, and got thirty cents a bushel for it, that we will gain—if you take the cost of production into consideration,—that we will gain nine cents per acre. That is a pretty good yield, and that is our profit. Well, this man was satisfied with thirty bushels. Of course, he was somewhat ashamed to ask me, and therefore I said, "Now, I will tell you, Fred. You see, I got thirty-three hundred bushels from my sixty acres." He says, "I don't believe that." He wouldn't believe me at all. "Well then," I said, "now look here, Fred, I have been talking to you a long time,—talking to you long enough about tile. Now you say I had more acres in than I said. I will give you the dimensions of my field, and if you can't figure it out yourself go to some fellow that can. Now here are the dimensions, I will give them to you. My field is eighty-four rods wide and a hundred and fifteen rods long, and according to my figures it makes sixty acres and three-eighths, or sixty acres and a half, I will call it, taking in that sixteen-foot roadway to the end of the field. I will make it sixty acres and a half, including the sixteen-foot roadway at the end of the field." My oats that year graded No. 2, and I received two cents over the market price, two cents over No. 3 and 4. You will notice he worked sixty-five acres more land than I did, and got four hundred and sixty bushels more oats from the entire field of a hundred and

twenty-five acres. Here is an object lesson. Figure out the cost of the ploughing, seeding and harrowing, killing two horses, etc., and see what you have got. Now the boys at the farm figured it out; they valued his land at fifty dollars an acre, and valued my land at eighty dollars an acre, because my land was worth more and I should be charged more for rent. They charged me four and one-half dollars an acre for my piece of land, and they charged him two and one-half dollars an acre rent; the cost of production per acre for him was \$8.54; the cost of production per acre for me was \$10.60; I had \$7.16 per acre to my credit; he had nine cents. There it is in a nutshell.

I thank you all for your kind attention to my paper, and hope that you will go home benefited and tile drain your farms, and help to reclaim our wet acres, in this, our great State of Minnesota. (Applause.)

President Cosgrove: Are there any questions you would like to ask either Mr. Meyer or Mr. Elliott?

Mr. Halstead: In my locality we have large sloughs,—large, deep sloughs with water in the center, with a peat formation, they call it, an accumulation of vegetable matter, in the bottom. The soil is a very sticky soil, now I would like to know how this kind of soil would be affected by under drainage. You take that soil, when that soil ever gets in a condition so that you can get in there to work it, it is so sticky that it will not leave the plow, until its gets very dry, and then it gets so loose that the plow cannot turn it. Now, can I get any information on how tile drainage will affect that kind of soil?

Mr. Elliott: As I understand, the soil is extremely sticky when wet, and extremely loose when dry? And in either case, it doesn't plow very well?

Mr. Halstead: Yes.

Mr. Elliott: I apprehend that the soil contains considerable clay and also vegetable matter, and that by properly draining and then by plowing deep and mixing the surface soil with that lower you might change somewhat the consistency of the upper portion. Is it not true that the loose portion of the soil is fine, the upper six or eight inches, and it is more firm below that? Is that not the case?

Mr. Halstead: Well, in our section it seems that the middle of the sloughs consists of this muck, while this outside portion is this very sticky soil. You don't go very deep down until you get to the regular blue clay. The top soil over the clay isn't very deep, and, of course, that blue clay isn't very solid.

Mr. Elliott: I should think that placing a drain in just at the top of the blue clay, and draining it thoroughly, would practically change the consistency of that soil. I apprehend the water oozes out from the higher land instead of going down to the center of this slough, that it seeps out from the edge, and until you cut off that water and remove it, you can't do anything with that small edge. I should think that a drain parallel to the main course of the slough, and parallel to the higher lands,—in the center of the slough, as suggested by Mr. Meyer in one case, would obviate that difficulty. At any rate, I have obtained good results in some cases. That would be my suggestion.

Mr. Gunn: I am going to ask a question. We have just finished a drain through our section of the country, a county ditch five miles long, at a cost of \$17,500, and we are interested in about a hundred and sixty acres of flat peat, with a fall of only about two feet to the mile. Now, how would you recommend that we drain that into this main ditch?

Mr. Elliott: Do I understand that it is peat land?

Mr. Gunn: Yes, peat fifteen or sixteen feet deep.

Mr. Elliott: Now, gentlemen, you have touched upon a question that has not been very well demonstrated by actual practice.

Mr. Gunn: There is only about seventeen feet fall in the ditch of five miles.

Mr. Elliott: In the first place there is some difficulty in maintaining the grade of a ditch, either a tile or an open ditch, because of the shrinkage and settling of these peat lands, or those largely vegetable in their composition. You may make a ditch with an accurate grade and after the land is cultivated a few years settlement takes place and the bottom of the ditch is too low, or some portion of it is too low. It is full of hollows. Now that, of course, is one of the exigencies we have got to put up with. The first point to observe is to make that ditch as deep as possible, and give it all the grade that it is possible to give it, and then to make your drains with the understanding that the whole marsh, or land, will settle from one to two feet. I believe that the history of these cases is, that those marshes will frequently settle two feet in five or six years after they are cultivated, depending, of course, upon the amount of vegetable matter in them. It is not considered very safe to place tile drains in those muck marshes, or swamp lands, until they have settled quite materially. The practice in the old world, and also here, seems to indicate the wisdom of carrying the water off by open ditches until the land is pretty well subdued, and pretty well settled, and then to adopt a more permanent system of drainage improvements. Now there are some of these mucks, I know,—there is a gradation all the way from muck to peat which is pretty hard to describe. Peat when it is once decayed becomes black muck, and if the muck contains considerable clay, it will settle and become firm and permanent. I remember corresponding with a gentleman in reference to draining some muck land. This was grass muck, or sod muck. We have here in the north peat mosses, or moss peats, and grass peats and all that sort of thing. The gentleman stated to me that he placed his tile four feet deep; that he burned off one foot of turf of this marsh, and seeded it with timothy. He raised excellent crops of timothy for a few years with no other preparation. He asserted that in three years he found some of his tile which he had laid four feet deep, within a foot or two feet of the top of the ground. "Now," he says, "I would like to have you explain how that was." The only explanation is that, if he laid them in clay, that that muck had condensed or settled to that extent. Now, they state to me that in Wisconsin in the moss marshes there, and that even in the cranberry growing marshes, they have known those marshes to have settled at least eighteen inches within the last ten years. It is one of the problems that we really don't know very much about by actual practice. And there is another thing that I think always comes first,—how valuable are those peat marshes for pro-

duction. Now, some of our people down in Illinois come up to these northern marshes in Minnesota and Wisconsin, and they see a marsh, and they say because a marsh in Illinois has been drained and made profitable, this would be equally so. But I tell you the lands are not all equally valuable in point of fertility, and this department in connection with the Agricultural College of Wisconsin, has been carrying on some investigation during the last year to determine, if possible that very point, as to how valuable those lands are, and how they can be drained. Now we have come to the conclusion that marsh lands of that character can be drained best by the construction of a series of open ditches about twenty rods apart. That is, the lands can be very well drained for field purposes or grass, or whatever use can be made of them, by placing ditches at that distance. Then after that land has been subdued and we know how permanent the soil is, then we proceed with some permanent set of improvements. I know it is the history of some of the Michigan marshes after the ditches had settled and gotten out of shape in some of their muck swamps, they have had to revise their system after several years on that account. So that the point is we must take into account the fact that they will settle, and that that settlement will be in proportion somewhat to the peaty or vegetable character of the soil, and that they may not produce soils of more than average fertility. It has developed in the Wisconsin investigation this last year that there are two kinds of peat lands, or moor lands, as they are pleased to call them there, with reference to their fertility. In Illinois and Indiana they have found those lands deficient in potash, but supplied with potash they bring it to fertility and produce good crops. They have found in Wisconsin that the unglaciated portions in the north, those swamp lands lying on a granite formation, were deficient, not in potash, but in phosphorus, that the application of potash did not improve them at all, but the application of phosphorus and phosphoric acid, and also some potash, together, produced remarkable results. Whereas the peat lands of the south, the glaciated portions, were like those of Illinois and Indiana, they responded to potash, and also both responded remarkably well to the application of manures. So that when we touch upon the reclamation of peat marshes and muck marshes, we are upon a field upon which we should proceed with caution. Still they are worth something and people are developing them. I think there are three hundred thousand acres of that class of lands in Northern Wisconsin. Now under the Wisconsin state law for drainage, they are constructing drains upon them, and going to find out what can be done with them, but just what can be done has not been demonstrated so far as I know up to this time.

Mr. Gunn: I would like to ask this gentleman about a ditch in a draw. We put in a ditch with a five-inch tile, through a hundred and sixty acres in a draw, and we had splendid results the first year. We put it in for just the reason he mentions, so we could cultivate all the farm acres. The second year we had a very wet year, and terrible heavy rains, with the result that there came a heavy rush of water upon the land, the land being cultivated, it being grass land before, and it cut a terrible gulley through it, right into our tile. How would you overcome that?

Mr. Meyer: Well, I stated in running your tiling, if you have gullies between two knolls, to lay the tile up into those gullies and on your level portion both, and have a catch basin on your level above.

Mr. Gunn: Yes. This draw runs straight across the hundred and sixty, very near straight, it varies a little to the south.

Mr. Meyer: Well, the only thing I can say,—have you any high spots on the side that runs so awful much water down?

Mr. Gunn: Well, there is quite a fall all the way through,—it is a gulch all the way through.

Mr. Meyer: What is the size of your tile?

Mr. Gunn: Five-inch.

Mr. Meyer: Well, that is too small.

Mr. Gunn: Then it could never take that run of water anyway?

Mr. Meyer: How many acres have you got?

Mr. Gunn: Well, it is a hundred and sixty rods across and a hundred and seventy rods long.

Mr. Meyer: The trouble lay in your tile, you had your tile too small. You ought to have had at least an eight-inch tile in there. We figured in Illinois that on ordinary ground that a twelve-inch tile would carry the water from two hundred and forty to three hundred acres. My advice on that would be, to dig up your five-inch tile and put in eight-inch tile, and then if you have any water from the hilltops, or your neighbor's water coming on there, put in a little catch basin, so that the water collects in that catch basin and goes down in your tile and don't flow on any more. There is where we have the greatest trouble with the gullies, the rains run into them. That is a point that we always hear about, those high level pieces, flat pieces. I am troubled with it the same as you people are. I thought before it wasn't necessary to do anything, and it acted just the same as it did in your case. Catch it before it gets down there, and get it into your tile ditch and let it run out in the ditch below. Now to illustrate, I will tell you that I had a low flat sixty-acre piece on the south side of my farm. My two neighbors on the south of me and the one on the west of me, didn't believe in tiling, and never will, because they are just like a man in an article I read a little while ago. This was a South Dakota man, and he thought that if we ran off the surplus water,—surface water,—that we did great damage to the community. And these neighbors are just laboring under that same theory. Now about that one drain. Now, what am I going to do with their water, I get it and can't help it. Well, I ran a big eight-inch tile up to my fence and put in a catch basin with stone and tile bats and a little gravel over it and stopped right there. Now when their water comes down, she does into that basin. I can plough and work over it, and their water all comes out at the lower end of the ditch. I had that in in the wet year of 1903. The people from the southern part of the state all know what fearful floods we had that year. I worked right over it and ploughed the latter part of May, but I couldn't plant my corn until the 8th or 10th of June. I had a hired man there and he says, "If that is going to do you any good, the tiling, the way you have it there, I must tell my uncle to come up here and look at it, and let him do the same thing. He had a hundred and sixty-acre field ploughed and there wasn't a drop of water on there the fore part of June, but it got so

wet and slimy, he couldn't get a team on it." In your case, your tile is entirely too small and my advice is to take them up and put in a larger tile, and to put in a catch basin above, and your wash-outs will be done with.

Mr. Nelson: How do you prevent the earth from filling in at the mouth of the drain?

Mr. Meyer: The earth?

Mr. Nelson: Yes.

Mr. Meyer: I have stated that the catch basin should be made out of rocks,—we call them "nigger heads," or tile bats, and then gravel should be put on top of that. No dirt can then wash in, because the dirt will stay on top of the gravel. I have it here in my article, and I believe I read it, that it should not obstruct farming over it. Now, say you leave sixteen feet for a catch basin. Over your last tile you put in,—block your end up pretty good with tile bats, or set a board up against it,—my advice would be to block it up with tile bats. Leave sixteen feet of this open, on this tile ditch, and don't fill it in with dirt, but with stone and tile bats, and put gravel on top of that. You will find those places in your field where the water comes down from the hill tops, and if you have a place of this kind prepared, away she goes into that screen. If it can't flow off it will go below. Of course, you have got to have large tiles. That is the trouble with our gullies, when the water comes, it comes in a hurry, and is liable to tear up our land. As I said instead of filling that sixteen-foot space up with dirt, fill it up with stones or cinders, anything you have got that is loose, so the water can go through pretty quick. I have got cinders placed in some of these catch basins, as I call them, right alongside the road by our cemetery, the road right on my half-section line. The water comes down there "a-whooping" in the spring of the year, and goes right down the road and finds my catch basin, and over she goes right down into that hole, and it doesn't come over my line at all. I can work right over my land and pay no attention to the water, because that basin will take it all. You just try that, gentlemen, if you have such a place, dig down and fill up your space with little stones, and gravel over them, and your water will go down in a hurry.

Mr. Champlin: I think this is the most important subject that was ever brought before this association, and I hope the question I will ask will be interesting to others; and that is, in laying a long tile through a farm, in approaching the terminus or upper end of it, where the fall is very slight, and you have a good foundation,—clay foundation to lay it in, how shallow or how near the surface ought we to terminate that tile at the upper end? For instance, we are going through a slough where the fall is very slight.

Mr. Meyer: Well, that is a very good question to answer. I have described to you before, where you have very little fall, to lay your tile shallower on the lower end where the outlet is. Mr. Elliott here stated that we could lay our tile almost on a level at the lower end. Now we may have a slough that we can't get in any deeper than sixteen to eighteen inches under the surface, that is the top of the tile, while back further the land may be higher so we can get more fall. You see your trouble in having this kind of flat land near the outlet is that you cannot bury your tile deep enough, so to speak. I should think your tile would work all right fifteen inches under the surface where the only trouble is frost. The only trouble we have in

that case, is in the spring when it gets real miry and a good deal of water comes down from the hill-sides, where you don't have any tile, your horses may step over these tiles and kind of tip them up a little bit. The best way to overcome that would be to lay a fence board, or a plank over the tile and then throw dirt around them, and then in case your horses go through they won't tip the tile. Now, I have some tile that are not in more than thirteen inches under the surface, and they are all right. Now in the case you allude to, that you have in your slough, you say you can't go any deeper than twelve, or thirteen or fourteen inches?

Mr. Champlin: I have got about two feet.

Mr. Meyer: Well, that is ample. You see, this slough that you want to go through, if you can't go deep enough in the center, you can lay some branches on the outside, and go around that deep spot a little bit. Go as close to that deep spot as you can, so you get twelve or thirteen inches of dirt over your tile, and then you will be all right. Your water will be drained out of there anyway, because we claim that tile one foot deep will drain one rod from the side,—isn't that so, Mr. Elliott?

Mr. Elliott: I wouldn't vouch for that.

Mr. Meyer: That is what we claim it will do.

Mr. McDermott: About draining boggy land,—the question came up yesterday, but this particular one was not touched upon. Mr. Elliott intimated that in all probability our peaty land here was not as profitable after drainage as that of Illinois. Would it be an indication that it was worth draining at least, if now, in its present condition, it produces a heavy growth of grass wherever there is sufficient solidity, and also brush and trees, at the present time?

Mr. Elliott: I think that would indicate it had fertility and was productive, of course. I want to supplement a little, what has been said in regard to these other two questions by Mr. Meyer. In the first place, I think I appreciate the difficulty described by Mr. Gunn, in having his tile washed cut. It appears that his tile had been laid along a watercourse, and, as Mr. Meyer says, the tile was entirely too small. But what I want to say here is this, that we may very frequently supplement tile drainage by open drains, making the open drain a sort of a relief drain, where it is impracticable to make tile large enough to take the flood of water through a watercourse, such as described by Mr. Gunn. Now, we have found that it is very practicable to make a broad, shallow ditch through these draws, such as has been described, in the middle, or a little to one side of the center, and to lay a large tile drain,—the tile drain should perhaps be ten or twelve inches in size through the middle. Under extreme circumstances the land would be flooded, unless we maintained a well-graded, shallow channel along the center, which would carry out the flood water. It would not be an inconvenience to the cultivator of the land in any way, if it were cultivated land; it could be cultivated over, or if it were grass it would be no inconvenience to the machine in harvesting, or haying. It would answer the purpose and produce perfectly drained land, for just as soon as the flood was off, then your tile begins to take water underneath, and in that way you get your drainage conditions without using such large tile. Now that was forced upon me in my early experience. I didn't believe it could be done very well, but it is done now

very largely in handling drainage district problems. I want to say this too. In Illinois, they are now substituting large tile for small open ditches, leaving a broad, shallow channel, as I have indicated, for extreme floods. They are using in the ditches tile from six to eighteen, twenty-four, or even thirty inches in diameter. They are expensive, and yet they are substituting those in order to obviate the inconvenience which these deep open ditches, however small they are, are to a farm.

Now in regard to the shallowness of that tile. I would advise the gentleman that, although thirteen, fifteen or eighteen inches may do, to grade back his tile until he gets them twenty-four inches deep. It will pay. Now on these low lands some say they will fill up,—some say your drains will fill up, and perhaps they will. But they are more apt to settle and you will have your tile too shallow after a time, and I doubt the wisdom of laying tile at a less depth than two feet,—and thirty inches is better. I believe the additional expense and trouble in going back and grading them down until you get that depth will pay. If you have two inches to the hundred feet, cut it to one inch and get your depth, because you can substitute larger sized tile and obviate the necessity for a heavier grade, but you cannot use a shallow ditch,—you cannot obviate a shallow ditch by laying large tile. Mr. Meyer's advice is very good, but I think mine is a little better in that respect. We used to think that was all right, and I have seen very satisfactory results, but we find it is better to put those tile, twenty-four to thirty inches deep.

(End of Session.)

President Cosgrove: I want to say before closing this morning that it is very gratifying to the management to see such a large attendance this morning, and I think you will all feel amply repaid by having been here. I agree with Mr. Champlin that it is perhaps one of the most important subjects we have had before these meetings. However, I think the rest of the programme for the next two days will be equally interesting. Everybody present here can get a programme at the desk as they leave the hall, and find out what the programme is from day to day. This afternoon we will meet promptly at two o'clock. The secretary will now make some announcements and read the appointment of committees as follows:

Resolutions, A. C. Cooper, chairman; Wyman Elliott, J. J. Furlong, John Timpane and J. C. Hills. Credentials, T. H. Canfield, chairman; W. H. Lightly, R. J. Hall, N. K. Hunt and E. T. Champlin.

AFTERNOON SESSION.

TUESDAY, JAN. 8th, 1907.

Meeting called to order by Dean W. M. Liggett.

Dean Liggett: Gentlemen, be seated. The time has arrived when we must get to work again. Our first speaker will be professor Parker, of the Experiment Station, Assistant Agriculturalist of the Minnesota Station. Subject: "The Relation of Live Stock to Land Values and Net Profits." Mr. Parker!

THE RELATION OF LIVE STOCK TO LAND VALUES AND NET PROFITS.

BY E. C. PARKER, ST. ANTHONY PARK, MINN.

Mr. Chairman and Members of the Agricultural Society: I feel as though I almost owe you an apology for appearing before you today in the place of Mr. Galbraith, a man who is older than I am, and a man whom many of you know would have come to you with a very interesting subject. Nevertheless, I believe I have a subject which is of extreme importance to every one of you, as well as a subject that is not new in any sense of the word; a subject of the greatest important to the farmers and agricultural interests of Minnesota at the present time, because this state is in a stage of transition from the old line of grain farming to more diversified farming, and through the experiment station and the agricultural school, and such organizations as those, the knowledge of the proper handling of live stock must be disseminated to the men who are actual producers in Minnesota, because in no other way can our agriculture advance to a point in the next generation where it will be a profitable vocation. And for that reason this subject is of importance, although it may be a disappointment to some of you to have not heard the speaker who was scheduled for this afternoon.

Now, if you will pardon me for using statistics, for I know statistics are dry to a great many people, I will take the liberty of referring to a good many statistics this afternoon to bring out certain points as to the relation of live stock to land values and net profits. Many of these statistics have been taken from the census, but the majority have been taken from actual work among Minnesota farmer in determining the cost of producing field crops and other farm products. Comparison are odious I know, and yet to prove a good many of my points, I am going to take Minnesota and some of Minnesota's forms of agriculture and compare them with those of Iowa.

I find in studying the census that the average value of farm lands in Minnesota in 1900 was \$25.50 per acre; that the average value of farm lands in Iowa in 1900 was \$43.31. During the following five years our lands increased in value to \$28.44 per acre; and the farm lands of Iowa during the same period increased to \$49.91 per acre. Expressing this increase in percentages, Minnesota's farms increased during the five years 24.4 per cent, and Iowa's farm lands increased in value during the same period 29.4 per cent. Their lands have increased more rapidly than ours.

Again from the census I find that the average value of farm products per acre in Minnesota was only \$4.87 in 1900, while the average value of farm products per acre in Iowa at the same time was \$7.62. Our average cash outlay for labor on a 169-acre farm was \$108. Iowa's average cash outlay for labor on a 151-acre farm was \$72 per farm.

Now what relation does live stock bear to these statistics? That is the main subject of my discussion today. Iowa's annual live stock product per agricultural worker is \$328, while ours in Minnesota is \$81. In other words, Iowa's is four times as great per worker.

Our live stock values reduced to an acreage basis amount to \$3.39 per acre, while Iowa's amounts to \$8.06 per acre. Theirs is over twice as great.

Expressing these figures in percentages, we find the value of live stock per acre in Iowa to be 137 per cent higher than it is in Minnesota, and the value of Iowa's farm lands 69 per cent higher than it is in Minnesota.

To sum up briefly, I think we may say without a doubt that these figures show that the value of live stock per acre is more than twice as great in Iowa as it is in Minnesota, and that the value of Iowa's products per acre is about one-third greater than Minnesota's. Now climate and soil and markets have a great influence upon the profits in agriculture, and upon the profits per acre, and yet I can see no way to analyze these figures except to analyze them in this way,—that the greater investment in live stock on the Iowa farms is mainly responsible for the increased profits per acre, or the increased income per agricultural worker.

It is a fundamental law of agriculture, that the type of agriculture must vary with the price of land and the nearness to market. The value of the land as a factor in production is rarely thought of by the old farmers,—men who came here twenty-five or thirty years ago and procured cheap lands, many for nothing, or a price not to exceed \$10 or \$15 per acre. Such men are not prone to realize that when land values have increased to \$75 or \$80 an acre, they are actually losing money on their investment by following the methods of farming that they followed twenty-five years ago. I know many men under such conditions who would be far better off if they should take the cash value of their farm and invest it at 4 per cent in the bank, and go to work at \$1.50 per day, providing they are following the same system of farming that was in vogue twenty-five or thirty years ago. You cannot put square pegs in round holes, and you cannot take a man who is adapted to one system of farming, a system of farming in vogue twenty-five or thirty years ago on cheap land, and put him on \$75 or \$80 land, and have him make a profit. He cannot do it. The system must change with the land value. It is a mathematical impossibility to procure the same rate of profit on high-priced land as on low-priced land with an elementary type of farming, such as grain farming. Just to illustrate that point, I will again resort to statistics. Take for example the wheat crop of Minnesota: 15 bushels of wheat per acre, at 70 cents per bushel on \$10 land will return a net profit of 54 per cent on the investment, but this profit is reduced to 7 per cent on \$50 land.

This fact may be expressed in another way: To procure the same rate of profit on the \$50 land as on the \$10 land, the yield of wheat must be 48½ bushels per acre.

Another example: Take the oat crop. 50 bushels of oats per acre at 30 cents per bushel on \$30 land will return a net profit of 23 per cent on the investment, but the profit is diminished to 7 per cent on \$70 land. Expressing this in another way: to secure the same rate of profit on \$70 land as on the \$30 land, the yield of oats must be 86 bushels per acre.

Taking the corn crop, which is usually associated with a more advanced type of farming than wheat or oats, you would find that 45 bushels of corn per acre at 30 cents per bushel on \$30 land would return a net profit of

12 per cent, but the profit is reduced to 2 per cent on \$70 land. In other words, to secure the same rate of profit on the \$70 land as on the \$30 land, the yield of corn must be 67 bushels per acre. All these yields are possible, but they are rarely secured. As a matter of fact, however, instead of there being any probability of securing such yields by the old methods of farming, the yield gradually decreases on account of diminishing land fertility and the increase of weeds, harmful grasses and noxious insects.

Now that brings me really to the main point of my discussion, which is this: That live-stock farming, in one form or another, is the only solution of this problem of making profits commensurate with high land values. Unless live stock, in one form or another, is used on high-priced lands, I repeat again, it is impossible to secure profits commensurate with the value of the land, and a man would be better off to take the \$75 per acre and deposit it in a bank to draw four per cent interest and work for \$1.50 per day than to go ahead with the old-time system of farming. He must understand the use of live stock under these conditions if he is to make a profit.

Live-stock raising is a necessary factor in securing a fair profit on high-priced lands for two reasons: First, the value of the crops may be enhanced by feeding. Of course the man who does not understand feeding or breeding or handling of live stock may not be any better off, but nevertheless in the majority of cases this holds true,—that the value of the crops may be enhanced by feeding. The feeding of the farm products on the lands increases their value. I want to bring out just one definite, clear illustration from one of the farms in the J. J. Hill farm management contest. A crop of corn that yielded 40 bushels per acre would have yielded that man at 30 cents per bushel, a net profit of \$1.75 per acre, if he had husked it from the standing stalks and sold it on the market. But the owner turned his cattle into that field of corn, fattened them at small expense, and realized a profit per acre of \$7.50 over and above the cost of production.

Now that is a simple illustration; perhaps it cannot be done under all conditions, but hogs and sheep and cattle may be used to utilize these products, and the cost of producing the field crops may be decreased by grazing them off with live stock, and the profits from the crop increased.

The second point why live stock is necessary to a profit on the high-priced lands is this: That crop yields cannot be maintained without live stock, and the manure produced from the forage crops fed to the live stock. We cannot get around it. Live-stock raising is necessary for the maintenance of the fertility of the soil, and just as important as drainage is to the agricultural interests of Minnesota, I venture to say today. I believe I am right in saying so,—that crop rotation and the intelligent use of live stock are more important than drainage, and I know drainage must precede these other things, but I reiterate, they are of more importance. I hope Minnesota will continue to produce wheat, and oats, and barley, and potatoes in large quantities, and I hope our total yield of grain products may be as great ten or fifteen years from now as it is today, but I hope the method of raising those products may cease in the next few years, and that we may see a system of grain growing combined with forage crops in which the use of live stock is included.

To show how the yield of grain may be enhanced by the use of crop rotation and manures, I will quote an experiment carried on at our station. Wheat grown continuously on the same ground for twelve years yielded on the average during the last six years 17.9 bushels per acre. During the same period, wheat in a five-year rotation with corn, wheat, meadow, pasture and oats, gave a yield of 26 bushels per acre. Wheat in a three-year rotation of corn, wheat, clover, gave an average yield of 22.6 bushels per acre. Moreover the yield of corn in that five-year rotation, which had manure added to it, was approximately 75 bushels per acre, and the yield of timothy and clover hay about 4½ to 5 tons per acre. Live-stock products and crop rotation go hand in hand, and the man who thoroughly understands it is the man who is going to make a profit on his high-priced land.

The question is often asked us, "What type of animals are best suited to Minnesota?" and there is no answer to that question. It depends on the climate, upon the markets and upon the individual,—the farmer's liking for beef cattle, hogs, sheep or dairy cattle. The relation of markets and prices to profits, however, is rarely understood and rarely used in the management of farms, or in the laying out or planning of farms.

It is absolute folly to advise farmers to go out two or three hundred miles from the city markets and put up silos and feed dairy stock, unless they have highly-bred dairy cattle that will produce a large gross product per year and unless the farm is located close to a market which will pay high prices for the products. We had better advise the men in the Northwest corner of this state and the western part of the state to produce beef stock, or sheep, or hogs, and to raise more corn and clover, than to go into intensified dairy farming. That is the last,—the final step, we might say, in agriculture, and it is folly to urge such systems of farming unless markets and prices and the knowledge of farming are correct for such a system of agriculture.

The type of farming which is best adapted to Minnesota, in a broad sense, is that diversified form which includes rotation of crops, which includes small grains, corn and clover, and in which the crops fed to stock, in one form or another, include at least one-third of the rotation.

Many of the men in this state, as I said before, men of age, who secured their land for almost nothing, do not often realize what this investment means to them in the securing of net profits. But take the young man just starting out: let him go out and pay \$75 or \$80 an acre for land, and he is the man who goes up against it! Unless he fully understands the feeding and breeding of live stock or understands the rotation of crops, he is going to be pursued by a relentless economic force, which crowds him to the wall. He has got to know these things or he cannot make money on these high-priced lands. Such a condition may be explained by the use of a few numbers. Suppose the producing power of the land be equal to 4, which represents the cheap land. You put a man on that cheap land who is a grain farmer, and his producing power is represented by 4, and his product would be approximately 16. You put a man on that cheap land whose producing power is increased by education, by live-stock raising and crop rotation, and his producing power will be represented by 6; four times that would be 24; take a man of still greater productiveness, whose power is represented

by 8, and you will have a product of 32. Take those same producing powers in the men and put them on high-priced lands, as represented by the figure 8, and the man whose producing power is represented by 8 gives a produce of 64; the man whose producing power is represented by 6, will give you a product of 48, and so on down. These figures hold true, no matter how you try to combine them or put them together; and the man whose producing power is only 2, or in other words, the man who has only a knowledge of elementary agriculture, can never make a profit on the high-priced lands. And that is the condition our young men in Minnesota are coming up against in the next few years, and unless through the agency of the Agricultural College, the experiment station, the members of the Live Stock Breeders Association, the members of the State Agricultural Society and other kindred organizations, a wide-spread knowledge of live-stock raising and crop rotation is gained in Minnesota, there will be tens of thousands of young men in this state who will not be able to make money out of agriculture. I thank you for your attention.

Dean Liggett: If there are any who desire to ask any questions of Mr. Parker, he will be pleased to answer them.

Prof. Shaw: I would like to put this question to the farmers generally, including of course Professor Parker: Reference was made to a man who turned steers into a corn field to fatten them. The question I raise is, do the farmers generally think that is a wise thing to do? Professor Parker is perfectly right in the reference: the man who did that was a man who entered his farm for the prize in the J. J. Hill contest, and he won the first prize of \$300. I know the party to whom he refers. In my write-up of that farm, I took the liberty to criticise that act on the part of that man, and, notwithstanding he won the prize, and he deserved it rightly,—how is it, farmers, is that a good way,—the grazing down of corn? If the question were raised,—is it a good plan to grow corn of a certain character and turn sheep on it to fatten, I should hold up both hand and say "Yes," and there are going to be thousands and tens of thousands of acres, not only in Minnesota, but in South Dakota as well, that are going to be grazed down in that way to fatten sheep, and I don't know of a cheaper way to fatten sheep, unless in conjunction with rape, but coming back to the question: Is it a good way for farmers to do, to turn their steers into a corn field and fatten them by grazing down the corn?

Member: I would like to ask Professor Parker a question regarding this feeding down of corn land. An animal, especially a hog or steer, will often eat more corn than he will properly digest when turned into a field; now will not 100 bushels of corn fed to a hog or steer in a stall or on a floor produce more weight, more pounds of flesh, than if it were fed in the field?

Prof. Parker: I haven't the figures in mind at the present time to answer that question correctly. Mr. Gaumnitz, of the Station, has such figures. If Mr. Gaumnitz is present, I will ask him to give those figures in a minute. That, however, is not the final question,—whether more pounds were made or not, but whether there was a greater profit. Now when the corn crop must be harvested and fed to the hogs, you have added a charge there of \$2.50 to \$3 per acre for the cost of harvesting that crop. That item

of expense would be saved by turning the hogs in and allowing them to gather it themselves. The question is not whether more pounds of product are made, but were the profits greater by letting the hogs fatten themselves, or by harvesting the crop and feeding it to them?

Member: That is what I intended to ask.

Prof. Parker: Well, I cannot answer that without referring to the figures on the subject. Is Mr. Gaumnitz present?

Prof. Shaw: The question I raised was not the question of fattening on the corn, but the question of cattle grazing down the corn.

Prof. Parker: I would answer the question raised by Professor Shaw. I did not wish to bring up the other point to try to raise a discussion on that particular point of comparing stall feeding with pasturing corn, but brought it up simply to show that a man could not procure the labor and harvest the crop with as great a profit as by grazing it down, and that man did actually make a profit of \$7.50 per acre by turning his stock in and feeding off the crop, whereas by harvesting and selling the raw product he would have made but \$1.75 per acre. That is the point I brought out, not to compare the methods of feeding at all. I have not the figures at hand, and I do not know whether any one present has the figures to show a comparison of the two methods of picking and harvesting the crop and feeding it in that way or turning the cattle into the field and allowing them to graze it off.

Prof. Shaw: Mr. Chairman, Mr. Parker I hope does not consider for a moment that I raised the question for the purpose of criticising anything he said. That is not it at all. Here is a question of great practical importance at stake. He referred to it incidentally as having been done by a certain man who was considered a good agriculturalist. The point I want to bring out,—and the farmers here ought to know it,—is: Is it a good plan to graze down corn with cattle when they are being fattened? I question it.

Member: As to the hog question, I have had a little experience along that line. I fattened two carloads of hogs, and let them hog the corn down. My old hogs did splendidly; my young hogs did not,—they rambled too much. We had quite a large grass field in connection; in this field we closed the hogs up,—the young hogs. We put two carloads of hogs on the St. Paul market; they were fattened in six months, weighed 226 pounds and topped the St. Paul market at 5 cents.

Mr. Mills: Relative to steers or cattle in a corn field: That plan is an old one in Illinois and Iowa; it was practiced at an early date and is still practiced in those states, and even in Missouri. I talked with a gentleman from Missouri last year who said he never picked the corn for cattle. There are certain elements that enter into this question of feeding in the field,—the condition of the crop, how well its stands up and what kind of weather you have. If you have wet, sticky weather, muddy weather, the cattle will destroy a great deal of the feed, but if the fall is dry, and you arrange to let your hogs in after the cattle, there isn't any doubt in my mind but that there is a big saving when you take into consideration the conditions we are now under relative to help. Cattle won't eat any more than they want, and after the first few days will go in there and feed and

then go out, and my judgment is that it is a cheap way: while I haven't the actual figures, my judgment is that it is the cheapest way and the most profitable way to harvest a corn crop, providing the field is in proper condition and you let your hogs in afterward.

Prof. Boss: I would like to say just a word on that subject while it is up, and in the first place will qualify by saying that I do not think there is anyone in this state, and I don't know that there is anyone in any other state, that can give the exact figures as to the cost or the comparative profit of the two methods. I have heard of two or three men in this state who followed the practice of turning their cattle into the corn field and allowing them to graze it down, and these men are satisfied that they made more net profit in that way than by husking the corn and feeding it to the steers. The farmers must not forget that it is not always the gross income that he can get per acre, or the most dollars in his pocket when the cattle get through the corn field that determines which is the most profitable method. I am not ready to say that allowing the cattle to run into the field is the best method to follow, but I do believe there is merit in it. The experience of these men is worth something, and until we can get exact figures on the question, I am satisfied to have those men, and just as many more as will, try the experiment, and give the rest of the farmers the result. If anyone present has any figures on this subject, I hope the spirit will move him to stand up and say so.

Member: There is a farmer whose place adjoins my farm in Iowa who harvested his crop every year that way, but he turns his hogs right in with his cattle. My judgment would be to turn the hogs in after the cattle, as the cattle will knock down a good deal of the corn, and the cattle will not eat it when it is broken down. He makes from \$2 to \$3 per acre by turning his cattle and hogs right into the corn in that way. He does not turn all his herd in,—just his feeding cattle. He puts in about forty acres of corn every year. That man runs 60 acres of land, and there are probably 40 or 50 acres broken. He puts in most of it to corn, and the rest to oats, and that man alone runs that 60 acres and runs it in that way, and he tells me he can clean up \$1,000 a year profit on that farm after all his living expenses are taken out and his interest and taxes.

Prof. Shaw: Now then, Mr. Chairman, I bring up the question for that very purpose: If the farmers of this state can make \$2 more per acre, or \$1 more per acre by turning their cattle into the corn and fattening them that way, they ought to do it. They are foolish to spend money in cutting corn and feeding it to their cattle, if they can make more by not cutting it. The general thought at this meeting seems to be that we cannot be quite sure in regard to the matter. I am not surprised at the conclusion that is come to. I expected that, but I brought up the question with the hope of getting some light thrown upon it, and we have had some light thrown upon it. I know the experiment stations cannot do everything. Our station has done a great deal, but allow me to make this suggestion,—that the experiment station take up this question and settle it. It is a question that can be settled by actual experiment, and it is a question that concerns probably fifty thousand farmers in Minnesota, and it ought to be settled.

Member: Professor Boss says, "If the spirit moves, get up and say something," and the spirit moves so hard that I cannot resist the impulse to get up and say something. The President of our Rock County Breeders' Association has 160 acres of land, and he fenced it around with woven wire, and cut it into four different fields. He has one field of 40 acres running across the place that he put into corn; then he cross-fenced that, fenced off ten acres and turned his feeding cattle and hogs into that 10-acre field. When he got that stripped, he moved that fence back forty rods and gave them 10 acres more. In our country the usual price for husking corn this fall was 5 cents a bushel. The men were making \$3.50 to \$4.50 per day. The corn was good, but they couldn't get help to do the picking, and he says the question is settled with him how he is going to harvest his corn.

A party in Pipestone county this fall shipped four carloads of fat lambs to market. He had 60 acres in corn; he cut 30 acres of it with binders and stacked it. The other 30 acres he had a man go through a few days after harvest and pick out the best of the corn,—the biggest ears; didn't pay any attention to the small ears, just husked out the best of the corn, and turned his lambs in there. The morning I was at his place he took out his lambs, and he gradually turned in his cattle and hogs, and he said the question was settled for him. He said he had that 30 acres that winter in the best shape it could be, and his lambs are going to Chicago for the finest sheep, weighing about 100 pounds apiece. The other stock was just going in there, and his whole fall's work was done without practically costing him a cent.

Member: Suppose you want to feed these cattle all winter in this climate, and bye and bye we get three or four feet of snow. How are they going to get it? Here is another thing: Mr. Mills says, "Let the cattle feed first, and then turn the hogs in." How are the hogs going to save the waste of the cattle after it is covered with snow?

Mr. Mills: They must take it before the snow comes.

Member: How are you going to fatten cattle if you don't feed them all winter?

Mr. Mills: Begin feeding them the first of September. No man can make money feeding in the winter time.

Member: I cut my corn with a binder and I haul the corn in; I give the steers a feed of this corn every morning, and then the other cattle come in and eat, and then the hogs. There is no waste then. All the labor connected with it is simply cutting the corn and hauling it in, and then you are sure to have the corn to feed all winter. Sometimes the snow comes early. We have had snows in November, and you surely could not have fed your corn crop out in November.

Another member: That is just the way I am feeding my corn. On my farm I have 44 acres of corn. The way I do I fatten the hogs along with the cattle. I turn the cattle in the first thing in the morning, and as soon as they are through I turn the cattle out and then turn the hogs in.

Prof. Parker: I think no one will argue against this statement: That the expense for labor on our farms can be decreased by fencing and pasturing and using forage crops. This consideration of labor is one of the most important things in deciding upon a system of farming. It costs from

\$2.50 to \$3 per acre to husk corn and get it ready to feed. If by pasturing this off with stock, we do not secure as great an income, we can secure a higher net income with a much smaller investment for labor; that is the point.

We have had a great deal of interesting information about this matter, but I don't see how anyone can argue against the things I have given you. I presume that in many communities the question of labor is such as to decide a man once and forever in regard to the cheap cost of production.

Member: I would like to ask the Iowa friend how the Iowans who are feeding cattle are doing? During the time of the cheap lands they used to feed their cattle in that way. Do they do it now, taking them as a whole?

Iowa member: A lot of them do.

Prof. Shaw: Mr. Chairman, Mr. Parker raised the question about the cost of husking the corn. Now it doesn't necessarily follow that corn which is to be fed to animals must be husked. If I understand the trend of things aright in regard to that matter, it means this,—that the day is at hand when there is not going to be much corn husked that will be fed to cattle, either for making milk or making beef. It will be grown in such a way that the corn will be harvested and fed without husking,—either shredding it and running it through a cutting box, or feeding it in the bundle, so it is not an absolute necessity to consider the question of husking.

Prof. Parker: In answer to that question I would say, it costs \$11.75 per acre to husk the corn, and to cut and gather the corn, and shred it, costs about \$3.00 more than that. I do not believe there is a man in this audience can feed that stover and get that much more money out of it. The cost of production by the shredding process is from \$3 to \$3.50 an acre more than picking the corn on the hill and then pasturing off the stalks, and if we allow a value of \$1.25 per acre for the stalks pastured off, a man is going to come out ahead by that method. I believe that a man cannot help but come to the conclusion that shredding is a practice that should only be followed where the hay crops are so badly weathered that they cannot be used, or where a good fodder crop or silo crop has not been put in. Shredding is an expensive process, and a man should plan for clover, or alfalfa, or thickly sown fodder corn, which will give him a much cheaper product. To go to work and deliberately plan for shredding is an unwise and un-businesslike practice when you consider the relation of the cost of production to the value secured from such a crop.

Mr. Mills: You are right. (Laughter.)

Prof. Shaw: Laugh, gentlemen; I am going to criticise that. (Renewed laughter.) I think that the farmers of the United States should practice shredding. Now, remember I am not advocating shredding in preference to other ways. I am not advocating any particular method. I want to get at the truth in this matter. That is what we want to know, and the farmers ought to know it, because it is an economic question, in which dollars and cents are bound up, and we ought to know which is the best method. Now I am not going to advocate shredding to the exclusion of other methods of handling corn, but I am going to criticise anybody in the United States who tells the farmers of this country that the shredding of corn under all conditions is such an expensive process, that they ought never to

undertake it. The farmers of the United States who practice shredding are legion, and they know what they are doing or they wouldn't do it. There may be some places where it is not a wise thing to do, but there are other places where it is a wise thing to do. (Applause.)

Member: I own a farm, and I cannot farm and pay taxes and pay help without shredding corn. For every acre of corn I shred I can maintain on an average one head of live stock on the corn,—I have 65 to 70 bushels of corn per acre, and also maintain one head of live stock on the fodder; and it seems to me we cannot afford to put two acres of crop in, one with hay and one with corn, harvest the corn and also our hay, when one acre will take the place of two with a little more labor. I have shredded ever since I began farming,—about eight years.

Another member: I am a new hand in this kind of meeting. I have been farming ever since I was a "kid," or trying to, up here in Minnesota. (Laughter.) I haven't made a very bad stab at it. I think you are all right here and all wrong on this corn question. (Laughter.) My first experience with shredded corn was not shredded, but was threshed corn. The trouble with that method was we couldn't keep the corn. I didn't have much hay, and I thought I would try shredding, and I got a shredder and practiced shredding it. With me, I would rather raise my feed, clover and timothy mixed, and work in my rotation of crops, and cut up my corn. I don't grow fodder corn unless it is a small piece with manure on it. I can raise more feed with an acre of good hill corn or drilled corn not too thick. I can feed the fodder and the corn with it, and only feed half as much grain. It costs me four dollars per acre to shock the corn, and in the winter time,—or the fall, we haul the corn in. We have enough stacked up so we can use it out of the stack, and the rest we use out of the field, and I don't believe there is a bit more waste feeding your corn in the bundle in a good yard than there is in feeding shredded corn. The cattle get the exercise. This gentleman here says he raises the corn and maintains his one head of cattle on the corn and one on the fodder. I don't believe it is a good policy to feed the cattle all on corn or all on stalks. A friend of mine had 60 head of cattle. He started them with green corn, then he fed them a little shocked corn and then ear corn. There were probably eight or ten of them foundered,—so sore they couldn't go. He is not feeding them a mouthful of hay. He will never make a success that way. They want something besides corn and corn stalks. I have had very good success feeding steers. I am feeding sheep now early corn in the ear, and they are not wasting a thing. As the gentleman says, if we had our farms fenced off into say five or ten-acre fields, it would be a good plan to turn the hogs in there right after harvest or the busy time, if we have other feed to use afterward. We don't want to feed cattle just in the fall a little while and then stop. In my country we are all "spring seat" farmers: we ride on a spring seat in the spring and we ride on a spring seat in the fall, and we sit around on dry goods boxes the most of the time. (Laughter.)

Prof. Boss: Before we leave that subject, I have the figures Mr. Parker called for in regard to hogging off corn, showing the value of husked corn against corn that the hogs husk themselves in the field. The last two years we hogged off about three acres of corn, and the results were: In a field

of standing corn it requires 1.21 pounds of shorts and 6.14 pounds of ear corn,—we husked part of the field to get the weight,—took an average weight of the field. It took 1.21 pounds of shorts and 6.14 pounds of ear corn to make one pound of gain when the hogs husked it themselves. When we husked the corn for them and hauled it, it required 1.57 pounds of shorts and 7.01 pounds of corn to make one pound of gain, or 1.23 pounds more of grain for every pound of pork produced; not only did it take more grain, but we were out our labor,—the cost of husking, which amounts to from \$3 to \$3.50 per acre. We snapped some of the corn and fed it in that way, and it took slightly less of the snapped corn, and the same amount of shorts to make a pound of gain. This is the result of an experiment carried on during the past two years.

Member: How old were the hogs?

Prof. Boss: There were some late winter farrowed and spring. Went in weighing 140 pounds and came out weighing 200 pounds:

Member: How long were they there?

Prof. Boss: They were put in about the 10th of September and came out some time early in November, between the 1st and 10th, I think. We had 32 hogs on three acres, but they were given the corn one acre at a time. We fenced off an acre at a time and let them have the feed. I would say, by the way, that there was rape in the field also, and that they had the benefit of the rape. Of course they couldn't get that in the yard. We made the conditions just as near similar as we could to have the experiment carried out.

Dean Liggett: We thank Mr. Parker very much indeed for the interesting manner in which he has entertained this audience. The time has now arrived for Dr. Brown, who will address you, his subject being the "Problems of Breeding." Dr. Brown! (Applause.)

Dr. Brown comes forward to speaker's stand.

Dean Liggett: I take pleasure, gentlemen, in presenting to you Dr. Brown, of Ohio.

CATTLE BREEDING.

BY DR. H. M. BROWN, HILLSBORO, OHIO.

Mr. President, it is a great pleasure to me to be here, I assure you. A great pleasure to have such an audience. I thank the farmers of Minnesota for such an audience, both in quantity and quality.

We had yesterday two or three meetings over at the Experiment Station, and they were delightful, in that there were many people, marked attention, extensive appreciation, and a good, all around genial feeling between us, and I enjoyed my experience over there very much. This is my first visit to this section, and if I should consult my own feelings, it would not be my last by any means.

One who writes or speaks naturally aspires to impress his thoughts favorably upon the minds of those who hear, and to do so to the extent of gratification, strenuous effort is sometimes made to originate something; to create new ideas, or to force so-called facts out of eccentric conclusions,

from false premises, thus misleading the unwary and teaching heretical whims that were better never to have been promulgated.

The writer knows that there is nothing new in the great law of heredity, but it is hoped that a keen observation of the physiological phenomena of reproduction, for a long period of years, may entitle him to speak with some degree of authority on certain phases of the great problem, which is the subject before us at this hour.

The same laws govern that governed in the beginning, and there is nothing complex nor enigmatical to cope with if we can but eliminate from our minds, that there is occult mystery, connected with the business of animal breeding, and bring ourselves to the conviction that form and quality are elements capable of certain direction by the human mind. We then are ready to comprehend, in a natural way, the simple art of conceiving an ideal and developing it the same as the sculptor, or any other artist, moulds the materials at hand, to conform to the model he wishes to reproduce.

Certain so-called laws of reproduction need never to have been taught, so far as any benefits we are to derive from them are concerned, and to eliminate them from our calculations, in our attempts to breed good animals, is an absolute essential.

It is true that in all large fields of inquiry there is a sufficient number of empirical coincidences to make a plausible case in favor of whatever view one may choose to advocate, thus any trumped up theory may be made to do convincing duty and carry unchangeable conviction to the minds of the unthinking and credulous, and a succession of mere accidents, in the processes of animal breeding, may perchance be formulated into a law that serves to complicate and confuse to the extent of positive and lasting retardation of the work, and I do not think it will end until those of us, who are responsible as teachers for the education of the masses, consent to simplify matters a little and get down to a common sense basis for the theory and practice of the members of our craft, that will have one common starting point and one common goal to be reached, sooner or later, depending wholly on the diligence exercised by the director of the work and not upon some mysterious and transcendently superior knowledge one man may possess over another of equal education and experience.

The law of atavism is but another illustration of the truth of the dictum that "like produces like," for when an animal takes after a remote ancestor, is it anything else than a proof that there were enough of the elements of that ancestor, in the forces at work, to produce another animal in its own image although long removed? If the progeny is a product of reversional heredity the fault lies with the breeder, if the quality is bad, for the animals in the pedigree are prescribed by the director of the processes, and if bad elements necessarily crop out in the product, he has only himself to blame for introducing any animal, which when reverted to, farther along, will disqualify the progeny of nearer ancestors of outstanding merit.

In theory that which I have just stated is regarded as sound reasoning, but in practice it is quite out of the question for many breeders to have under one management a herd of cattle at least, so long as to be able to eliminate all objectionable elements from the pedigrees of his stock, and in

case he did succeed in doing so, there would still be disappointments, that would come under the head of accidents of nutrition or disease, or what not, to disturb his rightful expectations, that could not be regarded as conforming to any law of breeding, which brings us to a consideration of the so-called law of variation.

I am aware that I am taking some chances, in this presence, when I state that such a law could not exist. The very fact that there are varying phenomena from one thing to another and many different things together, precludes the possibility of a law, governing such manifestations, for natural laws are not of such fickle character as to manifest themselves without system or reason of any kind. The variation can usually be placed under the head of atavism, or reversal heredity, or to accidental interference with even workings of the well-known law of like produces like.

Such disturbances may result from bad feeding, emotional shock from fright, to continuous agitation from rough handling throughout the formative period, or to unsanitary surroundings and consequent disease, making it impossible to attain the best results based upon the only real breeding law we have, viz., that of "like produces like."

Variations occur in the animal breeding evolutions, as well as that of plants at frequent intervals, but no one, I think, will be bold enough to try to maintain that such manifestations are governed by law, when upon investigation it can be shown that there is no consistency, rule, nor regularity about such manifestations and usually they can be traced to anarchistic violation of the simple laws we know do exist and concerning which all the years that have gone before have failed to show any permanent and fixed deviation from.

However much the method may be justly mistrusted and feared, we must, after a long century of hard work and experimentation, acknowledge that to inbreeding exercised with the greatest care and judgment, we, as a profession, owe our greatest triumphs in the art of breeding to a high standard of excellence all along the line.

The list of pre-eminently great breeders of the world is limited, as to length, it is true, but there is not one among them that has attained his reputation, as a great breeder, from products that are the result of a series of violent outcrosses, be it cattle, sheep, horses, swine, dogs or other domestic animals or birds. Yet I think that outcrossing is just as successful as inbreeding if the outcrosses possess the exact type and other desirable qualities sought after in the building up of a herd or flock in which form, feeding quality and constitution are the objects striven for, in the ultimate result, as sheep and cattle, for those are the characteristics that have made all the pre-eminently satisfactory herds, and such a happy attainment has been reached, in the main, by breeding the type in and in, and when we say type, we mean in its broadest sense, which would include form, style, constitution, feeding qualities and disposition.

It is well known that if two animals, to be mated, possess in common, a certain characteristic that—other requirements being normal—that same characteristic will likely be accentuated in the offspring, and if the two possess universally good characteristics, the result of this mating will likely be all that is desired. On the other hand the result of such mating may

possibly be a product that is greatly inferior to either of the two immediate ancestors which may be attributed to bad elements in the remote pedigree and which has cropped out, according to the law of atavism, or reversional heredity, in the production of an animal that takes directly after a common and inferior individual that some careless keeper of the trust, imposed upon him, has allowed to get into the prescription to mar its chemical formula and beauty of symmetry generations remote from that product.

Sir Henry Maudsley once said, "The individual is not responsible for the tyranny of his organization" and that the great, great, and great grandfathers may be responsible for the character, physical, moral and mental, of the subject under consideration.

Thus it can be seen at a glance how important it is to look well to the pedigree, in the selection of an animal, but most sticklers for pedigree slacken their diligence one generation too soon.

Good pedigree means that all the sires and dams, appearing in it, are creditable animals, but one usually forgets to count that the animal, being selected, is also a part of the pedigree, and is to be a part of its extension, and if it falls short of the wanted excellence of its ancestors, it should be cast aside as if poison, remembering that the selection of a part of the mass of material entrusted to that one, carries with it a responsibility which, I fear, is not fully appreciated by the average breeder of the age.

The excellence or non-excellence, of generations of cattle and the fortunes of generations of men may depend, to a remarkable degree, upon the selection of one sire or one dam to be incorporated into the material formula, of a line of breeding cattle, of high merit. Hence it will be seen how important it is that nothing but honest, earnest and persistent endeavor should be made, in such work, to the end that the breeding processes will cease to be a business that goes two steps forward, in the hands of one, and then three steps backward, in the hands of another and thus never attaining an ideal for want of concerted movement.

It will be seen that the writer is a believer in pedigree, but mark you, the kind of pedigree that is advocated in the foregoing.

There is another and a different kind of a stickler for pedigree, of an altogether different make-up from that which is advocated, viz.—The fashionable pedigree which means that it is a secondary matter that the animals composing it shall be of great individual excellence, only that they contain much of the blood of the foundress of the line, is all sufficient, and men have gone wild over, and spent fortunes for, a pedigree that, in many instances, is worse than worthless paper that will inevitably bring disaster and failure upon those who cannot realize the pitfalls into which they are being led by designing, speculating fortune hunters that infest the household of every breeding fraternity, at longer or shorter intervals, but sufficiently frequently and for a sufficiently long time to interrupt the complacent and even progress of the work, in such marked degree as to make incumbent upon the honest ones to start new at the end of each ruinous climax thus engendered.

A fashionable pedigree, is usually a pedigree that has been developed in the following way. An honest, capable and careful breeder begins, with good cattle, to improve them by a series of careful selections of sires. If good judgment is used each successive generation is an improvement over

the preceding, and the fixing of an individual type finally is one of the crowning accomplishments in that particular herd. Show yard successes follow and ultimately the animals of that herd are made fashionable by performance, presto, the whole people want them and the demand is great. The bad ones that have been discarded from the herd, for incompetency, are picked up by the speculators and put off, upon a credulous public, at fabulous prices. Those who were fortunate enough to get good ones, of the line, in the mad desire to get a progeny started, are willing to mate them to males of bad pedigree and incompatible type, and it is not long until all the good qualities are dissipated and sacrificed to greed and ignorance, and the whole superstructure so wisely builded, by the originator, is razed to the ground and we have nothing left but a motley crowd of weakened, typical and bastard scrubs that yet retain the name of the famous foundress of the clan, and are as salable as ever because the unscrupulous promoters of the fraud find no difficulty in passing them off on the innocent and unsuspecting purchasers until some one has the courage to call a halt or until it gets so bad that even a novice can see through it.

Such is the almost universal fate of the so-called ultra fashionable tribes of cattle, and the sooner we learn to recognize worth wherever found, and discard want of it wherever found, the sooner we will succeed and the sooner we will make it incumbent upon the unscrupulous to get out of the ranks of honest men and teach them that it were better to ply their nefarious trade along lines that are not productive of such lasting and irrevocable injury, as the result of their work, as in that of cattle breeding.

It is a most gratifying reflection for a breeder to know that wherever his animals may go they will be recognized as his handiwork. Thus it is frequently said with unerring precision, here is a Gibson Ram, or a Cooper or a Mansel or a Dudding, and with equal confidence and certainty, you might hear, from the ring side, that the animal was bred at Uppermill or that the Ballindallock type is evident from every viewpoint.

I have come to believe that unless the breeder can conduct his operations so as to place his own peculiar stamp of conformation, and of other characteristics, upon the animals he breeds, he will fall short of the success sought and that his fame will never reach beyond his immediate environment. To attain that end it must be admitted that inbreeding can but be resorted to to a greater or less extent, for it is quite impossible to get the desired type when frequent and violent outcrossing is the rule.

Having reached the conclusion that inbreeding is a necessity it behooves us to find a method of doing it, that is productive of no harm if possible, and I believe the possibility has been again and again abundantly proven, yet it will be necessary from time to time, to introduce new elements for the purpose of avoiding the weakening of constitution known to always result from too long continued incestuous mating.

The new elements that are to be brought in should always come from the sire's side, for while it is usual to say that the calf possesses half the blood of the sire and half the blood of the dam, yet as a matter of fact it has not been proven that the offspring entertains one drop of the blood of the sire in its veins, but it is altogether probable that nothing but the blood of the dam composes the circulating life fluid of the calf, from which we at once conclude

that diseases of that anatomical entity, all come from the dam's side and that all faculties and functions pertaining to vital phenomena, connected with the nervous system, such a constitution, feeding qualities and temper may be participated in by the sire. Making it patent, at once, the necessity of selecting well, along those lines in instilling new, so called, blood into the herd, and jealously guarding the healthfulness of the females of the herd, discarding all those that show the least deviation from the most perfect health in all and every particulars.

I do not deem an out cross a violent one, even though not the most remote relationship exists, if only the outcrossing animal is identical in type, rendered so by some generations of ancestors of similar conformation and character. Such out crosses are most desirable and if the breeder could always obtain them there would be no necessity for in and in breeding. On the other hand any animal of the line, however near he may be related, if the type is wrong, the cross, with him, is more or less violent in degree, dependent upon the remoteness or nearness to type he represents in his make up.

Type to type with an ever watchful and zealous effort to improve health, constitution, feeding qualities and breed character, is the motto that I would adopt, and let relationship take care of itself in the main, but, when possible, introduce unrelated animals to compromise with the prejudice, we all entertain, regarding near relationship, but never sacrifice one single iota of the original purpose of individual stamp, for an outcross that may do incalculable harm in the way of set backs that will take years to correct.

I have been wholly unable to see how animals of perfect health, perfect digestion, perfect form, perfect disposition, perfect reproductive powers and prepotency can possibly deteriorate, however much they may be in bred, if only all those attributes are kept intact by proper care and attention, always discarding those that are not so endowed, if by accident, they happen to be produced from the breeding herd.

The most successful show flock of Lincoln sheep, I ever bred, were lambs out of ewes with a common sire. I hazarded the risk because the ram was great, in all essentials, and very pre-potent. Those lambs were subsequently bred to unrelated sires and the best results followed, in that the most desirable attributes of the old sire were manifest in the outcrossed offspring and the flock has continued to this day to breed back to his type leaving out, of the individual make up, in a great measure, the characteristics of the intervening sires, and I have recently made up my mind to cast about for a son of the old ram in the hopes that I may more securely fasten his good points onto the flock. It is needless to say that that son must possess unmistakable evidence of perfect health and vigor of constitution.

The wonderfully beautiful type of the Shropshire sheep of the present day is due in great measure to a system of inbreeding and I defy any one to successfully deny it.

It is a dangerous thing to select sires haphazard, and I think I would advise, if I advised at all, that the breeder with ambition to be a leader, should not go outside his own herd to get them, but I would have him

deliberately to set about to breed them for his own use out of the best he has at hand, from animals whose capabilities, breed qualities and prepotency are a part of his intimate and certain knowledge based upon a close scrutiny for years together.

We will suppose that the individuality and specific type, that is fixed and regarded as a personality of the breeder himself, are a recognized entity, and the question of new sires to be selected is claiming a careful consideration. The continuance of the excellence of the herd becomes a knotty problem and not easily solved by the careful man. The man with no special insight as regards the possibilities, could settle it at once, by simply taking a collection of pedigrees as set out in the catalogue of a pending public sale and select one that has in it a large number of names that have been made famous by reason of a near relationship to some celebrated foundress of a family, and if he happens to be a busy man, simply send an unlimited bid to the auctioneer, without regard to individual merit or any thing else except to be sure of the fashionableness of the pedigree. Such a preposterous thing I have known to be done on more than one occasion, and, as would be expected, with most damaging results.

No sire should be installed whose ancestry on both sides, for several generations, is not well and thoroughly known by the purchaser and that knowledge is usually only possessed by the breeder, regarding the animals composing his own herd.

To buy a sire on inspection is almost as bad, for though he may be all that is desired within himself, who can tell without certain knowledge, what were the individual constituents of his ancestry.

If they were bad in part, the unerring law of like, produces like, will force, beyond the shadow of a doubt, a composite reproduction of all his hereditary qualities, good or bad, regardless of his own apparent excellence.

I would then breed the sires from my own herd something after the following plan, viz. Supposing the herd well along in its development and the type well fixed, I should select two, or more, of the cows in it that are the best breeders, the most prepotent and possessing, as near as possible, all the other desirable traits being animals thoroughly known and understood, and the progeny of a line of animals thoroughly known and understood by the breeder, as possessing no physiological tricks, nor short comings, but substantial and laudable breeding traits which can be relied upon as proven by a long trial. I would then cast about for a sire of equal merit in so far as is possible concerning which I had, as near as possible, equally intimate knowledge along all the required lines.

Disregarding distance, delay and expense, either by purchase or otherwise, I would mate them to him and continue the mating until they had produced bulls to my liking, then breed them to the herd in divisions, subsequently crossing the progeny one to the other, and never think of the relationship, except in the first instance, which should be, as far as can be, of unrelated blood. That plan I would carry out whether I was breeding cattle or sheep.

I must confess that my experience with swine, extending over a period of several years, with as many as four of the leading breeds, would cause me to hesitate to advise, with reference to them, a very long continued system of in breeding.

Not that the type would not be maintained, nor yet that the general excellence would not be perpetuated, but according to some leading theories of reproduction, animals that proliferate at such frequent intervals and in such a high multiple ratio, there is an incomprehensible biologic inhibition, on the continuance of normal prolificacy, brought about by incestuous mating, that does not otherwise become manifest and which may be corrected at will, by a judicious, complete outcross, and while I am not settled, upon that point, I am disposed to believe that there is something in the theory. Yet it is pre-eminently true that the great successes in the swine show yards of all countries, are the results of very close breeding to the line, and I think that, upon investigation, it might be proven that the fault, regarding lack of prolificacy, may be accounted for on the ground that individuals of small litters have been selected because of their great excellence due to a better start and quicker growth, which most small litters attain, as the result of better nourishment resultant upon a larger share coming to each individual, from the common source, than would be the case in a large litter.

As in other instances it would not surprise me to find that all the reputed disastrous results of the plan, could be effectually eliminated by a system of wise selection, carefully carried out, covering all points under discussion.

It must be remembered that all and every characteristic of man or animal whether naturally attained or is the result of accident, may finally become an element in the hereditary attributes of the race, in a modified degree. Thus a physical quality attained by accident may become a fixed entity, in the offspring, under certain favorable conditions, which statement cannot now, in the light of our present knowledge, be disproven, however much it may be sought to discard, as unscientific, such a ridiculous theory. It has been proven in practice a sufficiently large number of times to establish the truth of it, and we can no longer ignore the fact, but must take it into serious consideration when the question of keeping or discarding animals from the breeding herd, that may possess little points of difference that seem trivial but may be accentuated if allowed to reproduce their kind, is under advisement.

We have it from abundant and good authority that all so called variations are pathological and not naturally produced, by law, but according to the law, that like produces like, they will be reproduced with painful certainty, which includes all weaknesses of whatsoever kind, disposition, milking quality, weak digestion, delicate constitution, reproductive function and breed characteristics, etc.

But I leave it to all to decide whether or not one will have more of such undesirable traits, when breeding true to a well fixed line and type, or whether selecting, at random, from all kinds and conditions of stock unknown to him or any one else, for the sake of crossing to outside blood, and I ask what shall become of the purpose for which such an one started and when will he reach his goal?

Can it be answered, in which direction is he tending, or where he will finally land?

The correct theory of heredity has not, as yet, been worked out, but there are facts which have been empirically established, in practice, which are the only guiding lights we at present have, and I submit that it is better to

follow in the footsteps of the successful ones, disregarding the cry of the alarmists, until we have something more tangible, to show us the way.

I would follow the course as conservatively as possible, getting new material as often as it could be found that was not incompatible with the unwavering purpose in hand, sacrificing nothing, for a mistaken whim, nor being scared out by a popular fetish, based upon nothing but a prejudiced wail of the unthinking and weak-kneed devotees of unproven dicta which from time to time gain some semblance of credit, but sooner or later sink into oblivion for want of confirmation in practice.

Dean Liggett: Are there any questions? If there are, I am sure Mr. Brown would be glad to answer them.

Prof. Boss: I would like to ask Doctor Brown,—I notice he comes out very strongly in favor of in-breeding.—I would like to ask whether in his experience, or observation, in-breeding has been carried so far that he noticed any harmful effects, and if so, how great was the deterioration?

Dr. Brown: I would like to answer Professor Boss' question by saying that I think all defects are inbred. In other words, you take a herd of cattle in one man's hands, and they go down, and you take a herd in another man's hands, and they go up. The man whose herd loses vitality is in-breeding, and the man whose herd is going up is also in-breeding, but the man whose cattle are losing quality is in-breeding bad traits, and the other fellow is in-breeding good traits, and his herd goes up whether they are related or not. But if a cow has a bad trait and the bull has a bad trait, they accentuate that bad trait and they go down. If they are related and they both have good traits, if you breed them together, if they do not have any bad traits, then you are accentuating the good traits.

Now, then, as I understand it, the Professor wishes to know whether or not in breeding animals together that are related, there is really any deterioration of vital force, weakening of the constitution, a lowering of the standard of the animals, outside of any improvement or lack of improvement you may have by breeding together certain traits. That I think can be answered in exactly the same way. If the animals are perfectly strong in all directions, however nearly they are related, I do not see how it makes them weak to breed them together; but if one has a little weakness and another has a little weakness, it doubles that weakness to breed together. Of course that cannot be measured with mathematical precision, but if you pick out animals with strong points and breed them, regardless of relationship, you will perpetuate the strong points. If you ignore the weaks points, you will perpetuate them; but knowing that, and guarding against the breeding together of animals with these bad traits, I really think in-breeding has very little to do with it, except that long continued, close relationship may cause animals to deteriorate a little in vital force and things of that kind, but if you could tell just what degree of reproductive power some animals possessed, and breed those together that have the most pre-potent powers, they would never deteriorate then; you would breed the traits you see, and then if you knew intuitively the strong traits that you couldn't see, you would invariably bring them out.

Prof. Shaw: I would like to ask Dr. Brown if he thinks that man ever lived or ever will live who has the skill to in-breed animals indefinitely without leading to deterioration?

Dr. Brown: It is a question what is meant by "indefinitely." I am of the opinion that it can be done. I confess that it never has. In the first place I would say that Bates bred the Duchesses until he ran them out, but he did it because he forgot to eliminate those that were not strong; he forgot to separate those that had good qualities from those that had the weak points physically. He simply inbred them all together. Now when they did run out, nobody would cross with the Bates cattle: The Booth fellows would not cross with the Bates fellows. Finally the Bakewells got hurt by the Duchesses; they got hurt by the Bates badly and that cleared out the Grand Duchesses, and they were dispersed. They forgot to discard everything out of the herd that was objectionable.

Now to take animals and in-breed you will travel faster in either direction. You will travel much faster bad, and you will travel much faster good so far as the development of the herd is concerned, because it is a double process. If you out-cross you will travel slowly. For the man that wants to go fast and go on the good side and eliminate everything of inferior quality that comes into his herd by accident, it is impossible for him to deteriorate by in-breeding. I hope Professor Shaw understands that.

I want to say that I am extremely glad Professor Shaw has brought this up, because I blame myself for getting after him last year, and I think much of the credit of my coming here is due to Professor Shaw in order to get astride of my neck. (Laughter.) I am very glad to give him the opportunity, but I hope he will not annihilate me.

Member: I would like to ask the question: I infer from this talk that you refer principally to pure bred?

Dr. Brown: Yes sir.

Member: In breeding up for a pure bred sire, would you in-breed closely in line, or out-cross? In breeding up a herd, would you breed the sire back to his own calves in the same family, or get one that is not related at all to get the best results? Of course the majority of the farmers are breeding out of their herds, and the question is, how best to breed up the cattle they have? This question of line breeding and in-breeding is a mystery to most of us in breeding up the natural stock of Minnesota.

Dr. Brown: There is only one type of good animal when it comes to cattle: That is what we call the short legged mooley top, low down, of good constitution. Now that is all there is to it. If you will get that kind of animals and take them to the market, you wil get a good deal more than the man who pays no attention to it. The chunky, short legged, low down, and all those things which show it as plenty of quality,—you don't want one half bones, that the butcher has got to throw away; you do not want a grade animal's paunch, that is also something the butcher does not want: I know the feeder will sometimes say, "You give me a large bread-basket and I can put flesh on him." The fact is the feeder won't pay as much for that kind of an animal if you are grading it up for butcher purposes.

Member: I said for any purpose. We breed as much for dairy purposes in Minnesota as for beef purposes.

Dr. Brown: If you have a type fixed in the mind that you think is the most successful, I would follow that type. I think it would be necessary, finally, after long in-breeding, to get an out-cross, but never get an out-cross just for the out-cross' sake.

Prof. Shaw: Why get the out-cross if the in-breeding is better?

Dr. Brown: Now that is the point: This paper does not say that in-breeding is better absolutely and always. As I said, whenever possible to get animals of the proper type, in order to avoid weakening of constitution from long continued and incessant mating, try to get the out-cross, but if you cannot get the outcross of the same type, do not sacrifice the type you have already established for an outcross just for outcross' sake.

I believe furthermore that if an animal is not related, but of the same type, that he is not an outcross; he is just the same as an in-bred animal, because it is the type you are after. The problem is a pretty hard thing to settle. It is like all other things in the business of the man, if he has had it in his mind for years and has seen the final result, then he can handle these things with judgment and throw away his theories to a large extent.

Prof. Shaw: Do I understand you to say that there is no law of variation?

Dr. Brown: Yes that is what I said, and that is what I expected you to get after. (Laughter.)

Prof. Shaw: Well I am after you. Allow me to ask this question: You believe in variation?

Dr. Brown: Yes.

Prof. Shaw: Where does variation come from?

Dr. Brown: Do you want me to answer the question now, Professor?

Prof. Shaw: Yes, please.

Dr. Brown: I think variation comes from accident. I believe there is only one real law of breeding, and that is that "Like produces like;" the same as a grain of corn produced corn—

Prof. Shaw: You believe—

Dr. Brown: I believe that like produces like. That is the general scheme of nature.

Prof. Shaw: You believe there is such a thing as accident in this universe?

Dr. Brown: Oh, yes! I think that variations are pathological or accidental; but I believe furthermore, that they will produce their kind and perpetuate differences according to the law of "Like produces like."

Prof. Shaw: Then you and I have reached the parting of the ways. I believe, sir, that there never was and never will be in this universe a single thing that is the result of accident or chance.

Member: Mr. Chairman, I would just like to ask the gentlemen: I remember some years ago I had what I termed an accident in thorough-bred breeding. I was going to look it up and see if I couldn't trace it back in the breed. I had the good fortune to breed thorough-bred hogs that weighed from 500 to 800 pounds apiece, and I thought it was an accident, and I would like to know whether that was something more than an accident?

Dr. Brown: I would like to ask Professor Shaw a question. I enjoy that. I got after him at Columbus, and I enjoyed it better than having him ask me questions. (Laughter.) Professor Shaw will admit, I have no doubt, that sometimes we have perfectly healthy animals that become diseased. That is an accidental condition. The result of that disease may be a break, if the animal has a severe attack, to a very inferior animal, which

I consider an accident, not in the regular line, because of the disease. Then this animal, coming of the progeny of high class animals, becoming weakened and deteriorated by reason of the accident we call disease, will produce its kind because of the law of "Like produces like." Then we have a whole lot of inferior animals coming from good animals on account of an accident. I would like to ask the Professor whether that might not be classified with accidental conditions outside of the natural order? Animals of the highest type may be deteriorated by over-feeding, or under-feeding, or a good many other things that take them off from their normal lines of development; simply what I might call an accident.

Prof. Shaw: Of course this is a metaphysical question that I imagine may not be very interesting to this audience, and we might argue it out for a week, but in answering the doctor's question, I will say this, that I do not believe that any effect takes place in breeding cattle, or in breeding any other class of animals, that is not the outcome of a cause, and I call that cause "law." So that everything that happens in breeding is the result of a "law," and therefore I say that variation is a law, and a law that is exceedingly apparent, always appearing. For we never mate two animals but what we find there are variations: the offsprings are not exactly like the parents; that either comes without a cause, or with a cause, and so it comes with a cause, or the result of a cause, and that cause is "law," the "law of variation."

Dr. Brown: Professor, just one word: Isn't this that we call "variation," the result of mating animals that are not alike? Now then, wild animals are alike; there is no variation in wild animals.

Prof. Shaw: Just allow me to stop you there. Did you ever in this world see two wild animals that were absolutely, exactly alike? (Laughter and applause.)

Dr. Brown: Did you ever see two that were not alike? (Renewed laughter and applause.)

Member: Now my experience in variation is this; the farther apart that you mate two animals, the greater and the sooner will be the variation. If you incest-breed two animals for successive generations, if they are strong enough to stand that test, there will be no variation. Now that is my experience, and I have tried it a little. The variations we get come from mixing, or from mating, you might say, two cross breeds, and you cross breed if you mate two animals of different blood. If both animals are in the same family, there will be no variation. Now that is my idea of the source from which variation comes. If you repeat that long enough, it becomes a law. If you do not repeat it, you may call it accident if you like.

Dr. Brown: Let me correct you by saying that it becomes a law immediately in the next generation.

Member: That is it exactly.

Another Member: The question asked a few minutes ago, I think is a question of a great deal of importance in grading up cattle. That is, as to whether a party who has common stock shall buy a pure bred registered sire and shall use him on his offspring continuously, as to the advantage or disadvantage of that, and if it is not wise to do it. I don't think we want to get that impression.

Dr. Brown: That is a point exceedingly well taken. I really, in preparing this paper, was considering the question of pure bred animals that have a complete and very careful and full supervision the whole time, with the view of developing certain traits,—those points that are characteristic of pure blooded animals that you wish to develop. Now when it comes to mating indiscriminately animals related to each other incestuously, I think the plan very bad, because you are not discarding those that possess bad qualifications; you are keeping all the animals in the herd and you are incessantly in-breeding to those animals, and a great many, by accident, or otherwise, or by Professor Shaw's law of variation, deviate from the standard of good quality. Just as soon as they deviate, they are capable of reproducing to a remarkable degree those bad qualities of breeding from the ancestry that gave them to them. If the individual would discard everything that shows the least deviation from the normal health and normal type, and breed them back, he would be just as successful in his breeding as the breeder of pure bred animals under the most able supervision. Do I make myself plain?

Member: Only experts should attempt that?

Dr. Brown: The man who is breeding pure bred animals is presumably an expert. That really was the purpose of this paper. I think the thing should not be attempted in any marked degree when you are breeding grade animals for butchering purposes.

Member: I would like to ask a question along the line of the last question asked. The situation with us here today is that there are a number of us,—practically the majority of us, are young men in the breeding business. I would like to ask if you are strong enough in your convictions to recommend to the young breeder the practice, in breeding hogs, or cattle or sheep, of following up this method of selecting the best males from his own herd, in preference to going out and picking animals from other herds, and if you would consider him safe in following that practice?

Dr. Brown: No I would not; because he runs a risk then of deteriorating his herd, because he leaves all of the weakened animals in it to continually develop the weakness. I think a man who is not skilled,—who has not a knowledge of these things,—it is a dangerous thing to advise him to go to work inbreeding. But, nevertheless, that does not take away from the facts as they exist. The truth prevails under all conditions, and it has been my prime object to portray the truth in this paper: at the same time the truth bears with it an element of danger if it is not properly supervised. I do not think I would advise a young man who has not had large observation and experience along these lines to undertake such a thing as that until he has gotten acquainted with the science of reproduction. I think it contains an element of danger the whole time, but it contains the only possible success.

Member: Wouldn't he be as apt to make the same mistake in selecting from somebody else's herd as from his own herd? In other words, if he has judgment in selecting from other herds, would he not have judgment in selecting from his own herd?

Dr. Brown: When he reaches that point, he is an expert, and I would advise him to trot along. (Laughter.) I do not advise selecting out of your own herd haphazard, but pick out what is best of your herd and then go to inbreeding them.

Member: It is just a question of whether he couldn't select out of his own herd as well as out of some other.

Dr. Brown: The only possible way to carry out an improved type of cattle that is successful and maintain it, is by inbreeding. It cannot be done any other way.

Member: Mr. Brown, it is customary up in our country amongst the farmers who have some calves in the spring, and one is kind of scrubby, off color, to use him for a sire. How long have we got to keep that up until we land somewhere? (Laughter.)

Dr. Brown: Well he has got me guessing in two things; the first thing is, what I do understand as to what he said, I am in doubt about; and the other is, I really didn't know what he said, but I understand you to say, if they are not good enough for steers you make bulls out of them?

Member: Yes. (Laughter.)

Dr. Brown: I can only say this in response to that question,—that whenever I find an animal too good for a bull, I "steer" it and sell it to Col. Liggett. (Laughter and applause.)

Member: With sheep, if a man follows this inbreeding up, doesn't he reduce the size? He might increase the wool, but will he not decrease the size? I have been breeding sheep for 45 years, and if I want to get an excellent hide on sheep, the same as they do in England, and send them over here and sell them to us, they inbreed largely; they will get more wool, but they are not apt to get as large a sheep. Now that has been my experience,—unless we cross with a Shropshire or a Southdown, and then we will get a back anyway. And that is the reason I think the cross-bred is the successful sheep; it makes a good type. I may be off, but I am very careful about inbreeding, and I am certainly very careful about advising my customers in regard to breeding rams to inbreed, because if they didn't, you see, I couldn't sell a ram.

Dr. Brown: I know the gentleman who just sat down knows his business. I knew it before he said three words. He knows what he is talking about. It is a fact that in sheep you lose a little in size, particularly on the male side, by inbreeding; you lose a little in size in cattle, but you make it up in quality, in breeding lines and everything else. If you pick for size, you get it, no matter whether you inbreed or outcross. If you breed for quality and perfection, if you haven't a large animal, you can sell him to the man who knows his business, no matter what his size. You have got to have the compact animal today,—short legged, of good breeding and feeding capacity. You do not want size, but if you ever do, simply select for it. When you are selecting for quality, you are getting a smaller size, because you never find quality in size. That is the truth of it.

Dean Liggett: Are there any further questions? If not, I think it is time for closing. We have had a very delightful afternoon, interesting I am sure. We have a programme this evening that I know will be interesting. It will be under the auspices of the State Dairy and Food Department. Last year the programme was selected by Mr. Slater, and he had a good array of talks, and the subjects were discussed in an able and profitable way, but the audience was very small indeed. I hope it will not be so tonight. The programme begins at 8 o'clock. We are going to

have such speakers as Mr. Slater, Professor Haecker, Mr. Morley and others and the subjects will be interesting to you, I am sure.

Tomorrow morning the Field Crop Breeders' Association will have a session here and will discuss corn growing, etc., and we will have an interesting session. In the afternoon the Live Stock Breeders will have their sessions in the live stock pavilion at the Agricultural School. I am sure you will have a delightful time. We wish to extend to you on behalf of the Association, an invitation to take supper with us at 6:30 o'clock. I hope we will have a good audience. If there is no further business, we will adjourn until this evening at 8 o'clock.

EVENING SESSION.

Under the auspices of the State Dairy and Food Department.

Meeting called to order at 8 o'clock p. m.

Sec'y Randall: You will be seated, gentlemen, as soon as you can. As heretofore announced, and as shown in the programmes, which you have, the programme this evening will be devoted entirely to dairy interests.

It is unnecessary to speak of the importance of dairying in Minnesota, for I think all of you understand it. The programme will be given under the auspices of the State Dairy and Food Commission, and the State Dairy and Food Commissioner, Mr. Slater, will preside and take charge of the meeting. I now introduce to you Mr. Slater. (Applause.)

Mr. Slater: Judging from the number of dairymen who have come out on this stormy night to devote a whole evening, in a town as big as Minneapolis, with all its attraction,—I live in St. Paul myself,—to the subject of the cow, that old cow must still be doing business at the same old stand.

I can see more interest shown here already than was shown a year ago at our evening dairy session. Perhaps I am anticipating a good deal for what is to follow, but I believe that there are enough men right here tonight, interested in the old cow, to make the discussion interesting.

Now the value of this programme lies almost entirely in the discussions which should follow each paper or talk as it is given here this evening, and I want to see you all enter into the discussions at the end of the papers so that we may have the feeling that we have done ourselves good by being here.

I do not want to make the mistake of introducing Mr. Morley, who is the first gentleman on the programme, as "the first thing on the programme." You often hear a presiding officer get up and announce that "the first thing on the programme is Mr. So-and-so." Now you all know Mr. Morley too well, and would immediately resent by referring to him as "the first thing on the programme." (Laughter.) He has done too much for the dairy industry of our state, and in introducing Mr. Morley, I am at least going to refrain from introducing him as "the first thing on the

programme." Our first subject is "The Mission of the Dairymen's Association," and in looking about for a man to handle that subject, I naturally picked out the Secretary of the organization, Mr. Morley,—the man who has proven himself to be the right man in the right place. Mr. Morley. (Applause.)

THE MISSION OF THE DAIRYMEN'S ASSOCIATION.

BY J. R. MORLEY, OWATONNA, MINNESOTA.

Mr. President and Gentlemen: Mr. Slater has spoken well when he speaks of the importance of the dairy industry, and he might also speak of the increasing interest in the dairy industry of this state. My connection with the Association in an official capacity for five years has given me something of an interest. I have been to different parts of the state, in fact nearly all over the state, and I can see a bustling, increasing interest in the dairy industry, and the diversified farming which it leads to.

This association was first organized 29 years ago next month; on February 7th, 1878. Colonel King of this city, Minneapolis, made the call of the dairymen to meet and organize an association. They met in St. Paul, at the Metropolitan Hotel. About 28 or 29 people met there, representing the great dairy interests of the great state of Minnesota. You all understand that at that time a meeting of this sort would create very little interest, as dairying at that time was in a very backward state. Col. King in his opening remarks,—I get this from back numbers of the reports of the Association,—made this statement; that the dairy products of Minnesota on the whole were a disgrace to the state. Now what a change there has been in that. What would we think now if a man would say that the dairy products of Minnesota were a disgrace to the great state of Minnesota? Why we boast more of our dairy products today than of any other agricultural product. It has made greater strides, it has gone more toward perfection, than any other agricultural industry in the state.

Now during the life of this Association, which is now 29 years, the dairy industry has grown from a condition where its products were a disgrace to the state, to where it stands first among the dairy states of the Union in the production of dairy goods of fine quality. The Dairy Association does not take all the credit for these vast strides, but they certainly must have the credit for taking the initiative. Twenty-nine years ago the Dairy Association was the only body of men working to promote the dairy interests of the State of Minnesota, and wherever they held their association meetings,—their conventions,—those places today are the most prosperous dairy points in the state.

The Minnesota State Dairyman's Association was organized in St. Paul, February 7th, 1878. The call was made by Col. King and 38 persons responded, meeting at the Metropolitan Hotel.

All who were familiar with Minnesota conditions at that time can easily imagine that that meeting would be an occasion of very little interest to the general public, as dairying had made but little progress in Minnesota. Col. King in his opening remarks made this statement, which at this time

would be very startling: "The dairy products of Minnesota were upon the whole a disgrace to the State." Now we boast of dairy products as we do of no other agricultural product. During the life of this association, which is now 29 years, the dairy industry has grown from a condition where its products were a disgrace to the state to a condition where its products are excelled by none in the world and stands today at the head of the list of dairy states in the production of dairy goods of fine quality.

Now the Dairy Association does not take all of the credit for the vast strides that the industry has made, but it certainly took the initiative and localities of the state where those early conventions were held are now the most prosperous dairy sections we have. There seems to be something of an inspiration in a convention upon any subject and creates an enthusiasm that can be done in no other way and, wherever these annual meetings were held, the dairy industry sprung into prominence from that time.

The association has from that time to this kept up that line of work, holding annual conventions and as many smaller meetings as their means would allow, publishing reports of the conventions and distributing them to members and many others.

And while the industry has grown from small beginnings to an annual output of 80,000,000 pounds of creamery butter, to say nothing of dairy butter and cheese. Still the demand for work of instruction is increasing from year to year.

As the desire from the newer parts of the state to embark in the dairy business and diversified farming, which naturally follows it becomes more common, they naturally are anxious to learn from those who, in the older parts of the state, have traveled over the same road, from a single crop system of farming to one of diversified farming.

And as the territory of the advent of the cow expands it becomes necessary for the association to change the plan of doing work and, while it appears to be still profitable to hold the annual convention, a three-day meeting, at some convenient point in the dairy district, it also appears that the time is now ripe to hold auxiliary meetings preceding or following the annual convention in the newer parts of the state. Minnesota is a large state. The dairy interest and the creamery are spreading to the extreme corners of it and it is not practicable or profitable for farmers to travel these long distances to attend conventions. The convention must go to the farmer. This has been tried in a small way in the Red River valley where the Red River Valley Dairy Association, which was previously organized, was made an auxiliary of the state association and the state association has helped them to hold three meetings at Crookston and the increasing interest from year to year is very noticeable. The possibilities of the Red River Valley as a dairy region are being brought out and proven and there is no question but that in a few years the farmers in the valley will have graduated from the one crop system to the saner system of diversified farming. As an illustration, I attended the second meeting of the Red River Valley Association in February, 1903. I took some means to investigate as to the possibilities of the valley for keeping and producing the feed to keep the dairy cow and, among other things, the growing of clover. Everyone was of the same opinion

clover could not be grown, had been tried and proved an absolute failure. The needs of clover as a protein food was talked and all agreed that it was a serious disadvantage to any country to fail in growing clover. I attended the convention at Crookston again on the 14th and 15th of November last. And now they are boasting of their ability to excel any part of the United States in raising clover and especially in producing clover seed, and they had the samples of the clover right there to show what had been grown. And it equalled, if it did not excel anything I have seen grown in the southern part of the state. This only goes to show what can be brought out and developed as to what a section is adapted for by getting together and talking it over.

And this also goes to prove that the auxiliary system of holding conventions should be adopted. This association should now turn its attention to Northeast Minnesota, which is admitted by all to be a natural grazing country, where the tame grasses grow in greater luxuriance than in any other part of our state. The mission of the dairy association here in Northeast Minnesota must be to encourage the settlers in that new country to commence at once the keeping of live stock and especially the dairy cow; to show something of the profits and advantages that would accrue to them if they could, even in a small way, commence the keeping of live stock. The possibilities of Northeast Minnesota are wonderful when we come to consider the immense area and the adaptability of that cut-over country as a dairy country. Little has been done by way of education along that line in that locality except what is being done by the N. E. Experiment Station and the Farmers' Institute.

In the older portions of the state the mission of the dairy association is to educate along the lines of better breeding and better feeding of dairy stock as well as the best methods of marketing the product.

The fact having been established that the industry is a profitable one, the natural desire of the farmer is to increase his profits by some or all of the before mentioned ways. Much indifference is displayed even by many intelligent farmers on these lines. In matters of feeding much effort has been put forth to encourage the building of silos and growing corn to fill them, and growing clover for hay. Both are indispensable to obtain the best results from the dairy herd. The farmer who has at the beginning of the winter a silo filled with corn and a good supply of clover hay has roughage of the best that this climate will produce.

There is no way that we can get the same amount of succulent food for as little expense as by the use of the silo and, while the chemist does not find a large per cent of protein in the silage, this is one of the instances where the cow and the chemist do not agree. My observation teaches me that one of the reasons why the results are so good when feeding silage is that the silage acts upon the digestion very much the same as grass, that is, everything else that the cow eats is digested by the action of the succulent food, the silage. The association recommends the building of silos in all parts of the state from Rock county to St. Louis and Houston to Kitson. There is not a farm in the state that has ten milk cows on it that should be without a silo. So far as the problem of feeding goes, this is the most important of any, and it is coming; the results of work done are beginning to show. Wherever a good enthusiastic meeting is held and a discussion of the

silo had, almost invariably the next summer the silos begin to appear in that locality. I have yet to find one man who has not got good results from the silo.

We are knowing to the fact that the farmer is upon the whole the most conservative of all business men, therefore when a comparatively new thing steadily increases in use among the farmers and none abandon after commencing to use it is proof positive that it must be right.

And another thing that this association does. It elects farmers to fill its offices. It sends farmers to attend the meetings, that is, men actually engaged in agriculture either on the farm or at the agricultural school. No man to my knowledge has ever stood upon the platform in the name of this association and advocated the use of the silo that had not used one and knew what results might be expected from its use.

And exactly the same can be said about growing clover. Clover is the most valuable forage plant we grow in point of protein content. This association unhesitatingly recommends the growing of clover in any part of Minnesota, and I speak from over twenty years experience in the southern part of the state. From inquiry in going about the state I find it grows in all parts equally as well. Unlike any other crop we raise clover leaves the ground richer in nitrogen than it found it.

I think in my twenty years of dairying I have fed nearly all kinds of forage known to our climate and nearly all combinations of forages and nothing can be found that will produce the results at the milk pail for roughage equal to corn silage and clover hay properly cured when fed with proper grain ration to balance in the right ratio.

One more thing I must speak of as a very important mission of the dairy association and that is the little home co-operative creamery. Stand by the home creamery. It is yours; you own it; you control the output of your creamery as you do no other crop you raise. The mission of this association should always be to hold up and advocate the co-operative creamery.

It has never been the province of this association to recommend any breed of cattle, only breed for milk. Choose your breed and then stick to it, remembering that prepotency in the sire is the absolutely necessary thing and prepotency can only be got in any degree of perfection in thoroughbreds. Consequently the proper thing and only thing to teach is to improve the stock you have by introducing thoroughbred sires from milking breeds of cattle.

The matter of marketing butter is receiving some attention. As the management of that is studied it is becoming more and more apparent that improvements could be made in that direction. All of the agricultural education up to the present time has been on the line of more intensive farming and consequently cheaper production of farm products.

No attention whatever has been paid to distributing their products to the consumers. This has been left entirely to be manipulated at the large centers of trade by organizations organized for that purpose in which the producing and consuming world takes no part.

Let the creamery manager take this matter up with his neighbor manager and with the patrons of his creamery and, if there is interest enough manifested to warrant it in his section, call a meeting, perfect a local organization, attach yourselves in an auxiliary way to the state as-

sociation and get in to the work of improving the conditions of farm life.

In a summary way the mission of the dairy association is first to teach the importance of dairying as an adjunct to diversified farming, to encourage the building of co-operative creameries where there are cows to warrant it. Second, to teach correct methods of breeding and rearing dairy cattle to put on those farms. Third, to encourage the building of silos and growing more clover to feed those dairy cattle on and Fourth, to secure better treatment in the markets in the way of grading and selling butter on its merits. Any one of these four subjects would require a whole evening to do them justice.

All persons interested in dairying in Minnesota should become members of the association, should attend the convention at Owatonna which convenes two weeks from today. Programs are published in all of the dairy papers or can be obtained by writing the secretary at Owatonna.

Rest assured that no pains have been spared either by the association or by the City of Owatonna to make this convention a success.

(Following the reading of his paper Mr. Morley said):

Mr. Morely: I think one thing that is neglected in this state,—and I do not know why it is—is the growing of clover. Now anyone who has ever fed clover to a cow, and then branched off into something else, and has seen the difference in the results, must be thoroughly impressed with the value of clover. Then another thing, clover will produce more hay to the acre than any of the grasses. Clover will renovate the land. The only crop we have that will leave the land in better shape than it found it. It has the power to draw nitrogen from the air and store it in the soil for plant food. Of course alfalfa excels clover in some ways, but it is in the experimental stage at the present time. I understand the alfalfa all winter-killed last winter. I sowed a couple of acres last spring, and it looked all right this fall. I hope it will be all right in the spring, and if it is, I will sow more, because if we can raise alfalfa it is better than clover. There is only one thing that it is not better than clover for,—it does not enter into the rotation of crops. If you can bring your land around to raising clover once in four or five years your land will gradually grow better crops, and it will only be a few years until the soil will be better than it was in its original fertility.

Member: Why wouldn't alfalfa do for rotation?

Mr. Morley: The main reason would be that it is too expensive. And then alfalfa, if it lives, is better after it is established in the land. Then alfalfa is different from clover, in that clover is a biennial and only stays one or two years anyway, while alfalfa is a permanent crop, and it is too expensive to seed it for two season's growth. It cost me \$5 for the seed.

Member: It is harder to break up too.

Mr. Morely: I don't know about that. It has a strong tap root. It would have the same effect to renovate the soil, but if you have a piece of alfalfa you have a crop that is too valuable to plow up as long as it will produce. But clover will enter into the rotation of crops, and the man who rotates with clover should rotate so as to bring the land in clover about once in four or five years. That is about as often as it will do well on the same piece of land.

Member: Isn't it also true that it takes three or four years in Minnesota to get a good stand of alfalfa?

Mr. Morley: Well I don't know about that.

Mr. Schilling: The first two or three years it won't do anything. Alfalfa keeps on doing better for three or four years, and the clover only lasts one year when it is good for anything.

Member: You can get it the second year?

Mr. Morley: If you sow clover say last spring with your grain, next year you will have clover.

Member: Yes, the next year, or the following year in the summer you will have timothy, but toward August the clover will come thick over the whole field; in August and September you will have a nice stand of clover.

Mr. Morley: That is probably from re-seeding. It produces two crops: matures its seed and dies; that is my experience, and I have raised clover for over twenty years. I never had clover to call it a crop but one year, the next year after seeding. Of course if the seed scatters on the ground and re-seeds itself, the year following there will be clover there again, but to get the best results of rotation, one year is long enough to leave it.

Member: Plow it up in the fall?

Mr. Morley: Plow it up in the fall.

Member: Yes, but I think it is better to manure it in the winter, and then get a good pasture next year, and it will re-seed for a heavy crop of fall pasture, and then plow it up the next fall.

Mr. Morley: Well that depends on how a man is situated for the pasture. On high land that is all right, but there are many farmers who use it for pasture and nothing else.

Member: Ours is all high land.

Mr. Morley: Sowing clover one year, and then following with corn, it makes an excellent seed bed for corn. Barley will also do very well, but I wouldn't sow wheat or oats after clover. The ground is too loose, and it grows too rank; too much nitrogen in the soil, but the crop of corn takes that nitrogen out.

Member: Flax is good.

Mr. Morley: Yes, flax is good if a man wants to raise flax, but the flax don't work so well in rotation as corn. In the north where they do not raise corn, it will probably be well to raise flax or barley, but I would never sow wheat or oats after clover.

Member: That is not the case with alfalfa?

Mr. Morley: It is not.

Member: No, I found the ground plenty solid enough for any plant.

Mr. Morley: You have raised alfalfa?

Member: Yes.

Mr. Morley How long did you leave the land in alfalfa?

Member: Four years in alfalfa, and then killed it out by continuous pasturing. I did it just for an experiment; tried to kill it out, and did kill it out.

Another member: Where do you live?

First Member: In Renville county.

Mr. Morley: You made a success of alfalfa there?

Member: I made a success of alfalfa there.

Mr. Morley: Do you know what it produced to the acre?

Member: I didn't weigh any of it, but just an estimate. The second year I cut three crops off from it, and pastured in the fall, and it produced more per acre too than my timothy did on the same ground.

Mr. Morley: Each crop was more than the single crop of timothy?

Member: Yes.

Mr. Morley: Then you got three times as much?

Member: I got three times as much.

Another Member: About how much per acre did you get each cutting?

First Member: Well I couldn't tell. I didn't measure it, I just estimated the loads taken off from the land, just a rough estimate, the same as with the timothy.

Mr. Morley: How many loads did you get to the acre?

Member: Well to tell you the truth I don't know how many acres I had in; perhaps 12 acres.

Mr. Morley: How much seed did you use to the acre?

Member: I don't remember. I got my directions from Northrup, King & Co., where I got my seed.

Another Member: Last year I got four tons to the acre from mine, and I was well satisfied to get that. I got two crops per year where we cut it for hay; I got two large loads each year from a half acre.

Mr. Morley: What county do you live in?

Member: Rock county.

Mr. Morley: Have you taken the seed out of your alfalfa?

Member: No, sir. We have trouble about getting the seed.

Mr. Morley: I understand it will not seed in a moist climate.

Member: The only reason I haven't my whole farm in is because I haven't the seed. There has been a great deal of alfalfa sown in the country that people have been disappointed with, but within twenty miles of the place where we are now there has been alfalfa for twenty years, unless it has been killed out this last year. It has stood all that time and given very satisfactory results.

Mr. Morley: In Rock county you are getting pretty well down to Nebraska where alfalfa is right at home, and the conditions are considerably different there.

Member: Yes, we are just north of Iowa and just east of South Dakota. The soil is rather a rich loam and it is splendid for alfalfa. The stock take to it just as readily as they do to corn.

Another Member: What is the sub-soil?

First Member: Clay sub-soil.

Mr. Morley: You are aware that alfalfa has been grown in this state for over forty years.

Member: Yes, but they have never seemed to make very much of a business of it where I have known it.

Another Member: Well, in certain sections. It has been grown in Carver county where I am. I am well acquainted with the parties who introduced it. The seed was first brought from Switzerland, but they have had very poor success late years.

It has usually been conceded, that if they got their seed from Carver county there would be no doubt about making a success with it, but it is impossible to get the seed. We have to take the seed the seeds-men give us, and I suppose it comes from the Southwest where alfalfa is at home.

Member: I bought my seed from the seed houses here in Minneapolis. I live fifty miles northwest of here in Kandiyohi county.

Member: With clover in a dry year you will get a very light crop, while if they put in an alfalfa crop and get a stand, then they will have a good crop, and I believe it means \$10 an acre to the real estate in our state to get alfalfa growing. I put in a crop in Renville county three years ago, and I got a good stand. I just put it in to show the farmers that it would grow. It was put in on the best ground we had, where we had sugar beets the year before. I sowed clover as a nurse crop. The first crop was mostly weeds of course, but the second crop was more than half clover. I left it standing 8 to 10 inches high the last thing in the fall to protect it from winter killing, and it didn't winter kill last year either. I am satisfied we can recommend alfalfa in this part of the state.

Member: What is the reason they don't get a stand?

First member: Well, they don't know how.

Member: How do you sow it?

First member: Usually sow it with a mulch crop.

Mr. Morley: Minnesota is a large State. You take it in the timber cut-over country and clover grows almost spontaneously. You take it along the western part of the state where the soil is lighter and particularly subject to drouth, and from there to the Red River Valley, I would advocate sowing it with a nurse crop. Sow the grain one way and the grass seed the other. In our part of the state we never have any trouble getting a stand of clover. When a man uses a broadcast seeder, he simply mixes the grass or clover seed with the seed grain and sows it. Our soil is a heavier soil and does not dry out easily. If you use a drill, use it with a clover attachment behind. They drill it crossways of the grain, and then the grain isn't so apt to smother it.

Prof. Haeker: We have tried alfalfa at the Station. It is not in my line, but I try to observe the experiments that are being made that have a bearing on feeding the dairy cow. There was a variety of alfalfa raised in the Minnetonka district that had withstood the various climatic conditions some twenty or thirty years, called the Grimm alfalfa,—probably a local name, and we secured some of that seed. One little lot was sown south of the Dairy Hall. It is generally my custom during the summer season, when I start home for my lunch I frequently, and probably more than half the time, pass down through the fields and through the pasture, —if I can see something that needs my attention; I always like to meet the cows on the way. I watched this alfalfa. It was there for three years. They would get two crops off from it. It was a fine stand, on that light mellow soil in St. Anthony Park,—and they would leave the third crop for seed. They never got any seed, and I began to study the subject. I had heard at other places that they were getting seed. I believe there had been an option given on all the Grimm alfalfa in the Minnetonka and Carver districts. They didn't get any seed, but they depended upon the third crop. The third year, when I was watching this little tract, I noticed that during the time the third crop was growing and about the time it was coming into bloom, there appeared a little yellow devil, a little more than a quarter of an inch long, in the shape of a grasshopper, and he was feeding on the blossoms and we didn't get any seed. I was going to suggest

this year that they leave the first crop for seed, because part of that lot was fenced off into little paddocks for Dr. Reynolds. One of the lower paddocks hadn't anything in it; there was no stock kept in that part during the summer, and there were quite a number of alfalfa plants there of the first growth that matured seed, and they were heavily loaded. I told a student of the school of agriculture that if he would go down there and pick those pods of alfalfa seed I would pay him by the hour for doing so, but he thought it was a terrible task and didn't do it. I think the difficulty is on account of that minute, straw-colored grass-hopper, and I would suggest that they try to leave the first crop of alfalfa for seed, and I believe they will be successful.

Mr. Morley: I want to say just a word in regard to the Convention at Owatonna. It opens there two weeks from today. A good programme has been provided on the different subjects relating to dairying, and we are expecting to have a good time, and we would like as many of the dairy-men of Minnesota, as many of the creamery managers and butter makers and farmers of all classes to be there as possible. We agree to give you a good time and take care of you and entertain you royally. Accommodations will be provided for all who come. The convention opens Tuesday morning. Tuesday afternoon there will be a double session, one a ladies' session in another room. In the evening there will be a session at which the Preceptress here, Mrs. Boutell, of the Farm School, will speak on the "Education of the Farmer's Daughter," and D. D. Main, of the Farm School, will give a talk on "Agricultural Education." Wednesday evening there will be a banquet, and Thursday there will be two more sessions on dairying. There will be a butter-scoring contest, to which all the butter makers of the State are invited to participate freely. A fund of \$450 is now assured. There will also be some special numbers on the programme, and you are all cordially invited to attend the Dairy Convention at Owatonna and you will all be well taken care of.

Mr. Slater: This is the easiest dairy meeting to run that I ever had anything to do with. It seems to run itself.

The next speaker on the programme needs no introduction to any of you. I must refer again to the audience we have here tonight. I wish every old cow in the state of Minnesota could look in here tonight and see the faces of those who are interested in helping her along. It would do them good. (Laughter and applause.) As I say, the next speaker on the programme needs no introduction to Minnesota dairymen, and I am not going to take up time in eulogy of what he has done, but I do want to call attention to the fact, that I believe if we could understand the language of the old cow,—if the dairy farmer of Minnesota could understand the language of the cow he is keeping, instead of her calling for more of the poor feed and the poor care he is giving her, the old cow is trying to tell him to go up to the Minnesota Dairy School and learn how to take care of her. So leaving that school, Professor Haecker comes to us tonight to say something to us on the subject of the Dairy School and the Dairy Industry. (Applause.)

THE DAIRY SCHOOL AND THE DAIRY INDUSTRY.

PROF. T. L. HAECKER, ST. ANTHONY PARK.

Ladies and Gentlemen: It is due to me to say that I am not under normal conditions. I have scarcely recovered from an attack of la grippe; I have been in the dentist's chair for nearly five consecutive days, on account of which my nerves are pretty well racked, and I am, generally speaking, pretty well out of sorts, but I can always say a little something on the subject of dairying.

I had the privilege of attending the first day of the first dairy school ever held in America. I was a high private in the rear rank. For the first week I was assigned to the scrubbing squad, and the only mission I had was to prove to our instructors that I was a good scrubber. The circumstances were such that by the end of the first week, after a session of the faculty of the dairy school, I was notified to act as one of the instructors.

I have kept in very close touch with the dairy schools of this country. I think I know pretty well the manner in which each of them is conducted, and of the three leading dairy schools in the West,—Wisconsin, Iowa and Minnesota, we have had the least accommodations; we have been the poorest equipped so far as buildings and appliances are concerned. When I came to Minnesota they were building a dairy hall, which was to cost,—the building and equipment,—\$15,000.00. The average farmer would think, "Why, what more could you ask for?" I will admit that if we could have utilized the \$15,000.00 in putting up and equipping a hall adapted to dairy school work, that we could have come pretty near getting about what we needed, but it so happened that the dairy hall was not so built. It was arranged for a sort of a general purpose building; it has ever since been the administration building of the Experiment Station; until the last few years the division of agriculture was also located there. A few years before that the veterinarian division was in dairy hall, and then we have a lumber yard in part of the hall; (laughter) and so we have not had anything that was especially fitted for a modern dairy school.

It is true we have accomplished much. We rank high in our dairy products, and we are making very rapid progress so far as the yield of the average dairy cow in Minnesota is concerned, and I am glad to say that I believe the influences that have gone out from the Dairy School have had considerable to do with it.

Our equipment in early years was exceedingly simple. It was nothing compared with what our sister states had. Our students, when they would happen to go from the Minnesota dairy school down to the Wisconsin school, and see that magnificent building, that splendid equipment, and all the conveniences the country could afford so far as machinery and other appliances were concerned, would say, "Why, we are ashamed of the Minnesota Dairy School,"—that is, so far as its equipment and the buildings and the conditions are concerned. I have yet to hear a boy coming from our school say that he was ashamed of the results we were getting in Minnesota, notwithstanding the poor hall and the poor dairy equipment.

(Applause.) Now our boys are made from the same kind of dirt that the Iowa and Wisconsin boys are built from, and yet we can see a difference in the amount of the equation and in the personal ambitions and efforts when we cross the state line over into our sister State of Iowa. When we hold a meeting down in Martin county to talk to the butter makers in that county, why nearly every butter maker in the county attends the meeting. When we go to any of those border counties to hold a meeting in regard to the manufacture of dairy products, we find nearly every butter maker there. I have held dairy meetings from Winneshiek county,—the county west of Allamakee, nearly the whole of the line of northern counties of Iowa, and there wasn't half the attention nor half the audiences we have here. Now there is a reason for that. You may go into other states, and the managers of the creameries, if they are butter makers, or of the cheese factories, if they are cheese makers, they do not care anything about the man who brings milk; they do not think it is within their province to try to talk to their patrons. Nearly every young man that has ever left the Minnesota Dairy School considers it a part of his duty to talk with the patron as he comes in the morning, and try to give him information in regard to the matters that pertain to milk production, the kind of cow to use, how to handle her, and the kind of forage to produce.

Now why this difference? The teaching in the other dairy schools, in certain respects, are ahead of ours. In the book part of it they are far ahead of us. They do more work in the laboratory,—the little putting things receive more attention there than they do in our dairy school, but we try to fill the boys so full of enthusiasm and ambition in regard to producing the fine dairy products, and inducing the farmers to get the largest possible yield from their cows, that every boy that leaves the Minnesota Dairy School is a missionary with a broad horizon preaching the gospel of the new era in dairying to those that patronize their creamery. I think every patron here can testify that the boys that come from the Minnesota Dairy School know something about handling the dairy cow and forage production.

I think this phase of our progress comes because the person that has been responsible for the work of that dairy school did not come there from the college or from the book; he came there from the cow, and he had been with the cow nearly all his lifetime; he knew how to handle the cow and he loved the cow, and he wanted her to do well and be properly cared for.

So these boys that have gone out from here are really one of the best crops that a dairy school can produce. They are missionaries, and they are largely responsible for the reputation that Minnesota has today as a dairy state.

We are making commendable progress also in relation to the increase in the yield of our cows throughout the state. I want to make a little confession here. I came to Minnesota as a Jersey breeder. I had been a dairyman for a great many years. I had very good success with the Jersey cow. During the last few years I was on my farm,—the last half dozen years, I added to my herd a nice lot of Guernsey cows. I have had good success with them. When I came to Minnesota, and, after making

some careful demonstrations with the dairy herd, keeping the records of all the performances of the different kinds of cows, the work showed that a dairy bred cow, and especially the Jersey, and next to her the Guernsey, would produce a much larger return for food consumed than some other cows, not especially the breeds, but the styles of cows, so for some half-dozen years or more I was a very enthusiastic advocate of the farmers breeding their common cows to dairy sires of these breeds. I knew they were good for I had tried them,—one kind for a dozen years and another for half a dozen years. I knew what I was talking about. I had all the confidence in the world that I was right, and when a farmer came to me and wanted some advice in regard to dairy cows, I would recommend them. I do not do so now. I have learned a little something, and the reason is this: I found that farmers that came to me and followed my advice, that nine out of ten of them failed. Now it wasn't the fault of the cow, but it was the fault of the farmer, and I have tried very hard,—what little I could do,—to preach sound gospel as to the care and feeding of the cow, but I found that the average farmer was not going to do it, that he was not going to revolutionize his methods, so during the last half-dozen years, possibly a few more, I have been very cautious in regard to recommending high-bred cows for the average farmer, but I am a thorough advocate, and always will be, I presume, as long as I live, of improving our herds by having the farmer use dairy sires with the commoner grade cows. I believe that is the way he will learn to use the dairy bred cow, but it must first come from the grade, and I think that is one of the missions of our institution over there,—to advocate the improvement of our live stock as well as the improvement of our methods of manufacturing dairy products. During the last few years we have had so much to do at the institution that we have had very little time for field work. During the first few years I used to be most of the time out in the state, assisting in the organization of co-operative creameries and holding dairy meetings and so on, but gradually I had to give up that line of work. It is exceedingly fortunate that the Dairy and Food Department have swung into line, and that we have now a Dairy and Food Department, equipped with men competent to go out in the field and give instructions and sound advice in the various branches of dairying. Now that is something that the dairy school takes considerable pride in—our Honorable Dairy Commissioner is a student from the dairy school, and he was pretty green when he came there too (laughter), but now he very seldom makes a mistake.

All over this audience I see men who came to that dairy school years ago as mere boys, and they are now holding responsible positions, a credit to themselves and a credit to the State, and that is one of the things the dairy school has helped to bring about. I hope that in the future we will have a little more there to do with. We really need a little more of accommodations in the line of buildings. So far as the Dairy Hall is concerned, it is absolutely unfit for present conditions. There have been two revolutions in dairy manufacture since our dairy school has been established, and we are simply sledding along, hoping from year to year that we may get a little appropriation so that we may put the building in shape so we can use modern machinery.

I am not at all criticising the administration of our institution over there, or the University, for not supplying this Hall before; in fact I have not had the face to ask for it, because there were other departments of the institution that have never had a home at all, and it was but proper that we should wait before we got the second outfit in the way of a building, until after the other divisions had been supplied with a first one. Now since that has been accomplished, I see much reason for encouragement and the probability is that the legislature during its session this winter will provide us with a little money so we can put Dairy Hall into shape to be well fitted and adapted for dairy instruction.

I have also given considerable of my attention during the last ten years to investigations in feeding, and we have had no proper conditions for our dairy cows. They are quartered in a basement barn that was probably intended for feeding sheep, or steers, or something of that kind, without being confined to the stall. We have no ventilation and very little light. There is a great deal of noise overhead, because the horse barn is overhead, and for really first-class experimental work, and for getting the best results, the quarters we now have are not sufficient, and I hope that we will have a little money to build quarters for our dairy cows, which will enable us to do a little better work, and a little more of it, that we may give a little better account of our stewardship. I thank you for your attention. (Applause.)

Mr. Slater: You remember the story of the subordinates, or the insubordinates, with General Grant, going to Lincoln and complaining about Grant drinking whiskey, and the reply Lincoln gave to them. He says: "Gentlemen, go and find out what brand of whiskey Grant is drinking, and get some of it yourselves." (Laughter and applause.) Now the next time I have to make a speech, I am going to try and get in condition where I will have to go and consult the dentist, and if I can get good and nervous, and make anywhere near as good a speech as the Professor has here tonight, I think it will well make up for the time I have spent in the dentist's chair. (Laughter.)

Mr. Morley: Mr. Slater, you didn't give any opportunity to ask Professor Haecker questions.

Mr. Slater: I am going to. I was just going to make the remark that the next speaker is Mr. Trow: Is Mr. Trow in the room, A. W. Trow, on the programme? I haven't seen Mr. Trow here. That only leaves two papers remaining. The subject of the buttermaker, by Mr. Sorenson, will not need much of our attention other than he will give it, because he will cover it so thoroughly that there will be nothing else to say about it. Then I will have a short paper that will not need any criticising, because there isn't anything in it. (Laughter.) So that we can very well spend fifteen minutes right at this time in asking Professor Haecker some questions that I know you want to ask him.

Mr. Morley: I want to ask Professor Haecker: it is a well-known fact that we have the reputation in other states of being a great dairy state. While she is a young state, Minnesota has a fame as a butter state. Now I would like to ask Professor Haecker the reason for that? Why have we got that reputation and made that advancement, if he can tell us?

The Chair: Good question.

Prof. Haecker: It is a pretty hard question to answer. I find, as I go over the country and meet the various boys that are engaged in the manufacture of dairy products, that our boys all seem to be more ambitious and more anxious to excel in their work. They are interested in our educational contests. I think we have nearly as many in our educational contests as any other two states combined. In the national contest we have nearly as many as the two next largest states, and yet we have not as many creameries as Wisconsin has, anywhere near, and yet where there is a call for exhibiting butter at a contest in our national annual meetings, or biennial meetings, we find more tubs there from Minnesota than are exhibited from Wisconsin and Iowa,—that is, either of the states, and sometimes we have nearly as many as both.

Now that simply shows that our boys take a greater interest in perfecting their art, and why that is so, I do not know. I know they have that feeling, and I think that the reputation that Minnesota has won is largely through their efforts and what they have accomplished.

There is one point I would like to call attention to, and I had intended to mention it, but overlooked it. It bears right on this subject. Every instructor that has ever been assigned to work in the Minnesota dairy school was placed there because he demonstrated in his dairy work in his factory that he possessed more skill than the others did; that is, we have our best, most successful men giving instruction at the dairy school. (Applause.) I think that maybe that has had as much to do as any other one thing with the reputation our state has attained and the advancement she has made along this line. There may be someone else that can give some further light on the subject.

Member: How does the number of co-operative creameries in Minnesota compare with those in Wisconsin and Iowa?

Prof. Haecker: Iowa used to have more than we have, but there was no leadership in the state to stand by them, and consequently one by one they were swallowed up by the central churning plant, and nobody lifted a warning voice. The butter makers of Minnesota are thoroughly trained in the idea of co-operation, and I will guarantee there has never a butter maker left the Minnesota dairy school that was not a strong advocate of co-operative dairying and advised farmers to stand by their local plant. (Applause.)

In Wisconsin I hardly think there are as many independent creameries as in Minnesota, and Wisconsin ranks next to us in quality of creamery butter. She beats us in cheese ten to one, and her cows yield on an average a larger amount of milk and butter fat than ours, but we have an advantage that we can really boast about in our awfully good butter makers. (Applause.)

Mr. Josselyn: Mr. Chairman, I think more than any other one thing that has contributed to the success of our Minnesota creameries is the fact that the butter makers that gather to take these instructions and these lectures from Professor Haecker over here at the dairy school go out from there full of enthusiasm; I can say this from experience, and if any of the boys that go there fail to be enthused, as most of us are over our work, they are not very much of a success in butter making. (Applause.)

Mr. Sondergaard: Mr. Josselyn has said a little along the right line; I believe he could have mentioned another reason in answer to Mr. Morley's question. I don't know if he was too modest or not. When I came to

Litchfield in 1894 and took charge of the Litchfield creamery, I was told by the men in town the next day all about the industry in Meeker county. They told me how they were taking care of the cows; their only shelter was a barbed wire fence, and their only feed was the prairie hay that grows on the prairies, and I was discouraged; I was for a fact. Those that did keep their cows in a stable in the winter, didn't allow them to go out even for exercise. Now then I took charge of the creamery, and I says "I am going to make the best of it;" for a while after we started we made but little progress; but I had learned of course before that time that there was a dairy school, and that they were also helping the farmers in some way to get started in dairying. We organized a Dairymen's Association, together with the butter makers, and we held several meetings; in a year or two there were special meetings held all over the country, held at each creamery; each creamery organized its meetings, and the manager and secretary of that association secured three or four speakers from down here, and Professor Haecker was one of them, and they spent a week in Meeker county, and I want to say that the result of that work is shown in Meeker county today. You can go right out around Litchfield and you can pick out the farmers that have started with the Jersey cow, as the Professor mentioned tonight, and they have made a success of it. We had a few Jersey cows in there, and there is where we got started, and so the dairy cow has changed its place, it found its friends and it has found its true work through the people who took an interest in dairying, and that is just the other reason I wished to add.

Mr. Slaughter: I wish to say just two or three words. I wasn't born in Minnesota, didn't learn to make butter here, but I have learned a lot of things since I came here. I have just recently had the exceeding pleasure, not to say anything else, of attending the dairy school. A man asked me when I went out there this last fall, what I was going for. I said I was going to see what I could learn. He says "I think you are a fool to spend your time going up there." I said "Well I was told I was a fool all my life, and I don't know as it will make me any worse to go up there at this time, I wouldn't be any bigger fool." But I want to say this, that if I was a fool then I am now, but if I am a fool now, I am a good deal more enthusiastic one than I was before. (Laughter and applause.) I want to bear testimony to this fact, and I speak from experience, I know that what the Professor has told you tonight about the dairy school equipment is true, and I say it advisedly, that it is a disgrace to this commonwealth to maintain the kind of building and apparatus that we have at the Minnesota Dairy School. I believe the time is coming, and coming rapidly, when this is going to be changed. Why is it our butter makers are better today? I bear testimony to the fact that there is not in all this country, and I have made butter in at least half a dozen states, and I know the butter makers of this country possibly as well as the average man—I want to say that there is not a section of this country that can produce the kind of butter makers, not to say anything of the number you can produce right here in Minnesota. If you produced the milk in Minnesota that they produce in York State, I want to say your honors would be a great deal more than they are. If they had the butter makers in New York that you have in Minnesota, Minnesota would be trailing along considerable in the rear of New York State. They haven't got them; that is the reason I left there and came west—one of the reasons. (Applause.) How did you get your

butter makers? Because they have been educated, not only at the dairy school, but every man that has come in contact with Professor Haecker goes out as a living monument to his zeal and energy and personality. (Renewed applause.)

I did not come here to laud Professor Haecker. He does not need it. I did not come here to eulogize him. He does not need eulogies from me. No monument that I can ever erect to him would ever begin to compare with the monument that some day will be erected in the memory of dairying in this and every other country because of the work he is doing, not only in producing butter makers, but in the knowledge he is developing, and formulating, and evolving and simplifying, in such a way that even a farmer of average intelligence can take it and apply it to every day use and produce cheaper milk, and by producing cheaper milk produce greater profit.

I went to the Minnesota Dairy School this fall. I have been a student of dairying since a boy. I have been a student of dairying ever since I fed 80 cows and milked 25 before breakfast, and I want to say I never had anything but a rule of thumbs until I went out to the Minnesota Dairy School in the fall of 1906. You will find all over this country, in every state in the union except Wisconsin, and she is beginning now to practice the things Professor Haecker has been teaching, you will find in every state in this country that they are teaching the system based on those principles and formulas that has come to us from the other side of the Atlantic. Only a few days ago there appeared in one of our dairy papers an outrage upon the intelligence of dairy farming in the way of a formula for feeding dairy cows. These are the things that are giving you the prominence you have in this country. Not only have you got the butter makers and the co-operative creameries, but I want to go a step farther—I didn't say anything when Mr. Morley was talking and suggested that question of selling butter, because I am buying butter, and I thought I would have my inning down at Owatonna, but I want to make a proposition here, and you can think about it, and come down to Owatonna and thrash it out: I want to say to you sincerely, and honestly, that the day is close at hand when you must take the selling of Minnesota butter out of the hands of the merchants in yonder city and place it in the hands of the co-operative company, or concern, or organization, that will work for the interest of the producer, instead of working for the interests of the middle man and the schemer down yonder in the east. (Much applause.) Somebody said to me some time ago in a little meeting down in the southern part of this state "Slaughter you won't have any job; if you advocate that, you won't have any butter to buy." I want to say right here and now that if the butter buyers of this country cannot find anything to do and will stand in the way of the progress of the dairy business—and certainly the progress of the dairy business depends very largely upon the amount of profit that the producer gets out of it, and that depends on the amount, or the division of the selling price that goes yonder in the East, or to the merchant that is handling it—I want to say to you that if we cannot find anything to do but stand in the way of dairying, the sooner we are removed the better it will be for us and for all concerned.

Now I didn't intend to make a speech here, but I will tell you I haven't been away from the dairy school long enough to get over the enthusiasm. (Applause.) I learned so much about the dairy cow out there and about

feeding her, that really I haven't begun to understand it all yet. When we were starting in at the dairy school this year, one of the butter makers said to me "Mr. Slaughter what in the world did we come here for?" I said, "Came here to learn." He said, "Well if this is all we can learn, I might as well have staid in my creamery." When they got through he said, "Well, I guess it's all right." They didn't learn it from books or the equipment, but they learned it from the instructors, practical men, and from the Professor who stands at the head and who interested them in boosting the dairy cow that has done so much for Minnesota. (Applause.)

Mr. Slater: I am going to try and find out after this meeting what brand Slaughter has been taking. (Laughter and applause.)

Mr. Coleman: In my humble way I would like to say a few words. While I have followed the butter making business a part of my life, I am now selling milk, and I would like to ask Professor Haecker or Mr. Slater a few questions. Now we have to furnish these great cities with milk. Now where do we stand in selling milk to these cities? Our cows are tested for tuberculosis, and we don't know where we stand today. They rush milk in there and their cows haven't been tested, and the question is does the product of the cow make any better butter than it does milk? Now this is a matter I would like to have brought up here, and if we cannot get information from Professor Haecker or from Mr. Slater, I don't know where we are going to get it.

Mr. Slater: Are you going to be here tomorrow evening?

Mr. Coleman: I would like to be here a month if I can get the information.

Mr. Slater: Professor Ward will be here tomorrow afternoon.

Mr. Coleman: I know it. He has condemned six cows for me, and six of them don't have a germ in them. (Laughter and applause.) Those are facts.

Mr. Slater: I anticipate if you will attend the meeting tomorrow afternoon it can be made an interesting one. (Laughter.)

Mr. Coleman: I have the facts to prove it.

Mr. Slater: I was going to suggest that that question be left to Dr. Ward.

Mr. Coleman: That is all right, and yet he will condemn my good, sound, healthy cows. And not only that,—you know under these laws we have a right to protest. Now then, if we protest these cows under the judgment of this man who condemned the cows, why then it waives our rights. If that cow has a little germ which some of the experts will find there is in that cow, then we don't get a cent for the cow.

Then again, Mr. Slater, you have a test of the milk. Now this is the time to bring this matter up. I want to say to you, sir, conscientiously and honestly,—I have a Holstein cow,—now she will give about 20 quarts of milk. I can feed her all the feed she will eat, and her milk won't test over three per cent. If I bring that milk into Minneapolis or St. Paul, I will be hauled up, for my milk don't stand the test. Now, I want to ask, how am I going to get over that? I want Professor Haecker's opinion on that. I can feed my cow corn meal, I can feed the proteins that are advocated by the Professor people, then I am hauled up here in Minneapolis or St. Paul because my milk don't stand the test and fined \$25, just because I mix it with some germ or something else.

I want to say, Mr. Slater, that those are facts, and those are some of the things you want to overcome. You can sell milk at 12 cents a gallon wholesale and make more money than you can out of any creamery in Minnesota.

Mr. Slater: I guess we will have to prosecute the cows in order to get at the question.

Mr. Coleman: Well, I guess that is what you will have to do,—prosecute the cows. (Laughter and applause.)

Prof. Haecker: Mr. Chairman, the gentleman has a grievance; no question about it. It is not ten days since I addressed a letter to the Secretary of Agriculture in regard to this matter. Probably no one in the State of Minnesota outside of the dairy school realizes the amount of work we have done in analyzing and examining into this matter at the Minnesota Experiment Station during the last three seasons, and our investigations in that respect convince us that the average Holstein milk is better food than Jersey or Guernsey milk. I have been a breeder of Jersey cattle for thirty years, and when a Jersey calf drops in the Minnesota Experiment station, that calf gets milk from a Holstein cow. Now I am not prejudiced in favor of the Holstein cow. She gives thin milk, and you have got to do lots of milking to get a pound of butter, but the thing stares me in the face, that if I want a calf to do well, give it the milk of the Holstein cow. It is good food milk; and I would just about as well have milk testing three per cent fat as three and a half, and if I was to feed it to a baby or a calf, I would give more for three per cent milk than for three and a half per cent. The State of Minnesota says if your milk does not test three and a half per cent it is adulterated, and the man is prosecuted and fined, although it is the best milk given by any cow. (Applause.)

Member: I think there are some ideas back in this part of the room. Now you don't intend to convey that you could take Jersey milk, for instance, and add water to it and produce the same kind of milk that you could from the Holstein cow and make it test the same. I have tried that. I have figured on that for at least three days to see if I could add a certain amount of water to 5 per cent milk, or milk testing 5.5 per cent, and reduce it to about 3 per cent, and see if the component parts of the milk were equal to Holstein milk. (Laughter.)

Mr. Coleman: If I was making butter I would separate the milk or raise the cream, but that is altogether another matter. I am simply speaking of the milk supply of the cities.

Mr. Slater: I certainly agree with what Professor Haecker says. It is simply a question of the enforcement of the laws, and we have got to take the laws as they stand. It is now half-past nine and we have these other papers to handle and we want to wind up before ten o'clock.

Prof. Haecker: I want to ask the Dairy and Food Commissioner of Minnesota a question: He is looked to in regard to what laws there should be and what amendments there should be to our laws; is he in favor of leaving the test at 3½ per cent?

Mr. Slater: Here is the trouble from the standpoint of our commission. Every time the commission suggests to the Legislature anything that is going to be a lowering of the standard of our food products the legislators begin to think there is a "nigger in the fence."

Prof. Haecker: Send him over to me. (Laughter and applause.)

Member: When the cattle are making better food, why don't they make the change?

Mr. Slater: Well, think of the time I would have trying to convince them of that. In 1893 the dairy law was all re-codified, and the Dairy and Food Commissioner, Mr. O'Connor, drew the bill, and he left the test for milk just as it was, $3\frac{1}{2}$ per cent. It was suggested to him that in view of the fact that there were a great many herds,—and it isn't always Holstein herds by a great deal,—that wasn't testing $3\frac{1}{2}$ per cent, I am something of a creamery man, and we have some that do not test 3 per cent, and yet they have taken it into the creamery,—it was suggested to him that they lower the standard; and if he had in drawing that bill, made the standard three per cent, the bill would have been passed and no objection raised, and I have suggested that, why have the standard so high that men break the law?

Prof. Haecker: And even the cows break it. (Laughter.)

Mr. Morley: There are a good many herds at every creamery, not necessarily Holstein herds, but other cattle, where the milk of the herd does not test $3\frac{1}{2}$ per cent.

Mr. Slater: I tell you how that can be fixed: Simply require that milk shall test 3.25 per cent, or say down to 3 per cent,—so it shall test at least that much butter fat and shall be normal milk. Then we will have it definite. Then the man selling milk from a known herd that tests 4 per cent or 3.6 per cent, or whatever it is, cannot water the milk to get it down to the standard. Have some plan along that line that will work out. I have known this fact a long time, because the same arguments have been brought up before in our work. It would seem that we couldn't reach the cow. We have had to treat it the same as we do the retail grocer,—we have prosecuted him and he has had recourse back on the manufacturer. We have had to prosecute the dairyman and he didn't have recourse back on the cow.

Member: If you put the standard down, the man that has 5 per cent test milk he doesn't get as much for his milk as the man that has 3 per cent.

Mr. Slater: Well we have had it stated here that the food value of the 3 per cent milk is fully better than the higher test.

Member: Well you can produce the 3 per cent milk cheaper than you can the 5 per cent.

Mr. Slater: Yes, that is true.

Member: Hasn't some of the reports of some of the creameries, the whole of the creameries—hasn't some of the reports at some periods of the year, the whole test been below $3\frac{1}{2}$ per cent?

Mr. Slater: Yes, sir. The whole test of the whole of the creameries have been below $3\frac{1}{2}$ per cent. I ran across just such a report a few days ago. It was a cheese factory though; it was not a creamery.

Member: Mr. Chairman we all know that at the St. Louis demonstration with five different breeds, and they selected the best they could for a butter test, and I think there was not more than one breed, if there was one, that didn't at some time run lower than 3 per cent in the production of their milk, and if they in striving for the butter test made such a record, what is the use of having any higher standard?

Mr. Slater: I shall simply have to call time and go on with the programme. We will defer the rest of this discussion for tomorrow afternoon. It will come up very well in the discussion following Dr. Ward's talk.

I decided to have the butter makers represented here, and very naturally turned to the president of the butter makers and cheese makers association of the state of Minnesota. He is one of those boys who has contributed to the making of Minnesota's reputation for butter. You have heard the other testimonies tonight—Mr. Josselyn, who is the present world's champion butter maker, having won the medal at St. Louis, and Mr. Sondergaard, who also won a medal, and now Mr. Sorenson will give us a few words on the subject of "The Butter Maker." Mr. Sorenson!

THE BUTTER MAKER.

BY JAMES SORENSEN, LYNDALE, MINN.

Mr. Chairman, Ladies and Gentlemen: Our honorable chairman tried to make out that I was going to cover my subject so thoroughly that it would not need any discussion. Now if he stated that to an audience that knows me, they would know it was a falsehood, but to this audience, where I see more strange faces than faces I know, it may be possible you believe I am going to cover this subject very thoroughly, but I am going to tell you just a little about the butter makers, and if I should accidentally say more good things about them than I ought to, I trust that you will forgive me, as I happen to be a butter maker myself.

You have been told and have heard of the wonderful progress that the dairy industry has made during the past fifteen or twenty years and the butter maker has no doubt been a very important factor in bringing about this wonderful progress in dairying, and though I will admit that the butter makers have not done as much as they should, they should, however, be given due credit for having done as well as they have.

When anyone undertakes to manufacture any article, it matters not what it is, if the venture is to be successful, two things are necessary: first, a knowledge of the article manufactured, and second; the article must be manufactured in sufficient numbers or quantity if any money is to be made out of it. This also holds good in the making of butter or in successfully operating a creamery, and if the creamery is going to be successful, good butter must be made, and the more good butter a creamery can make, the more successful it will be, and it is especially the duty of the operator who takes charge of a creamery to see that the quality of the butter manufactured is what it should be, but even if he does do this, it is no conclusive evidence that he is a good butter maker. A good maker of butter is not always what we would term a good butter maker. A man to be a good butter maker must be something of a judge of human nature. He must know how to handle his patrons, and in order to do that he must first command their respect and confidence. He must be thoroughly posted upon the care of milk and cream upon the farm. He should also know something of feeding and breeding and the general care of the dairy cow, in order to assist his patrons in producing more raw material at less cost.

I said the butter makers should be able to handle their patrons. By this I do not mean that he should act as a dominator or a policeman, but be able to handle them in a friendly way, always having uppermost in their minds the keeping of friendship with their patrons. Friendship

and respect once gone, the butter maker will cease to be useful as an instructor to them.

Some thirteen years ago our butter and cheese makers awoke to the fact that if butter making, as well as cheese making and dairying, was to continue its progress, that we must put our shoulders to the wheel and all push one way, and the result was that the Minnesota State Butter and Cheese Makers Association was formed, and it has proved to be a step in the right direction, and this association, with the assistance of a few hard working friends of the butter makers, started to publish a little paper, called the Dairy Record, and this paper is today owned and published exclusively by the Minnesota Dairy and Cheese Makers Association, but as it has grown from a small paper to be one of the best in the field, it has been a gold mine to the butter and cheese makers, because we can discuss in its columns anything we wish, as we are the sole owners, and consequently matters have been discussed in it which possibly otherwise would never have seen the rays of sun light, and boys, plain every day butter makers, many of whom would possibly never have written a line for any other paper, have been responsible for most of the good reading which the Dairy Record has furnished its readers; and it is not easy to estimate the value that this paper has been to the butter and cheese makers, not only in Minnesota, but all over the northwest, and also to the dairymen readers, of whom it has a large number.

Now it is not necessary for me to tell you that the Minnesota butter makers are today considered some of the best butter makers in the world. You have all heard about the Minnesota butter makers, who a few years ago sent a tub of butter over to Paris and took first prize in competition with butter from all over the world, and by doing this they proved beyond a doubt that as good butter can be made in Minnesota as can be made anywhere else on the globe. Now this question of quality is no doubt something of great importance, as it is in any article that we sell. The better butter we make the more it will increase the consumption of butter. A butter maker myself, and consequently not afraid of being criticised a little by my brother butter makers, I will admit that we butter makers, in our struggle for quality, have to a great extent overlooked that very important part of quantity, and the butter maker that is going to be successful in the future, must know how to increase the quantity as well as to know how to improve the quality.

Member: Put some water in it.

Mr. Sorenson: Possibly. (Laughter.) As a man whose word we can hardly doubt says,—the number of pounds of butter made in Minnesota today could easily be doubled if the farmers understood the feeding and breeding and general care of the dairy cow. Stop and think what this would mean, not only to the dairy industry but to the general prosperity of our state.

Now it is a well known fact that there are many good, hard working, up-to-date dairymen right here in our state of Minnesota,—not hundreds of them,—but we must admit there are thousands and thousands of dairymen, whom we must necessarily call poor dairymen, and the only way I know of to make better dairymen out of them is to instruct them, and the way we are going to do this is the question. We know our Dairymen's Association and our Farmers Institute and a great many other associations, have done a great deal toward educating our farmers, but still there is

a class of farmers in each community that they cannot reach. Why? Because they will not go even to the meetings in school houses. I know this to be a fact, and the only way they can be reached today is through the butter maker. The butter maker must act as a missionary. It is the only way you can reach the individual dairyman today. When the butter makers attend our dairy school. Why does Professor Haecker tell them how to feed and care for the dairy cow? We have no cows in our herds that are dairy cows. Why does he tell us it takes a certain amount of protein to manufacture each pound of milk the cow gives? Why does he tell us butter makers these things as well as many other things? Simply because he knows the butter maker is the man that must carry this dairy gospel,—if I may call it so,—to the individual farmer, and because he has reason to believe that at least a portion of the butter makers will go out and preach this dairy gospel; and if it is only a little, this continual dropping upon the hard rock will in time wear it away. And, as I said before, although we have not done as much as we should have in the past, the inducements have not been such as they should be. The difference in price between good butter and poor butter has not been as much as it should be. (Applause.) But that is slowly changing. People are beginning to demand good butter more and more, and they are willing to pay for it, and they should have it, and I assure you ladies and gentlemen, that the Minnesota butter makers try to satisfy the demand and grade his salary on the quality of his butter. That is all he will have to do. Although the butter makers are far from reaching perfection yet, I do not think a perfect butter maker should live in this world: (Applause.) The world above is the place for him. (Further applause.) We have made progress, however, and the factors mainly responsible for whatever progress we have made may be summed up in the one word "Co-operation:" co-operation between the butter makers themselves,—co-operation between the butter makers and our dairy and food department and dairy school; co-operation between the butter makers in our Dairymen's Association and other associations such as the one that has been holding meetings here today, and if this co-operative spirit is allowed to prevail in the future as in the past, it will tend to make us still better butter makers in the future than we have been, and the future prosperity of this great state depends in a great measure upon successful dairying. So it is that the future success of dairying depends on the butter maker being able to do his part in preaching the dairy gospel, and working for quality and quantity.

Now, ladies and gentlemen, you will readily see that there is a great responsibility resting upon us butter makers; and I want to ask you for your co-operation and assistance; we need it. I want to ask each one of you individually as men and women who are interested in the future welfare of our state, to do all you can in your power to help make us butter makers and cheese makers still better butter and cheese makers than we have been in the past, and by doing this you will help to still further increase the profits arising from dairying, and make this great state of ours still more prosperous in the future than it has been in the past. I thank you. (Applause.)

Mr. Slater: Now gentlemen, I hope you will appreciate the position I am placed in. Here it is 10 o'clock. I have spent four days and nights on this paper. Now if I have spent all that time on this paper, and I have timed myself in reading it, and it only takes six minutes to read it, you ought to bear with me that long. The subject is Quality and Quantity.

QUALITY AND QUANTITY.

BY EDWARD K. SLATER, ST. PAUL.

My subject is such an elastic one that I concluded that it would be more safe for me to prepare a paper than to attempt to cover the subject at random in fifteen minutes.

In our particular line we have heard more about "quality" than we have "quantity." In fact we have been so busy patting ourselves on the back on account of the reputation Minnesota has won for her creamery butter that we have neglected to say very much about quality. I want to give particular attention to the question of quality at this time. I do not, however, wish to discourage the movement seeking for even higher quality in our dairy products. I would not be faithful to my trust if I were to do so.

The reputation which Minnesota enjoys as a producer of butter of fancy quality is worth cold dollars to every dairy farmer in the state, and we should use every honorable means to insure the retention of those honors she now holds.

I believe, however, that we have been paying too much attention to this side of the question alone. In our fight for quality we should pay a little more attention to quantity. In order to do this we need not let the subject of quality suffer in the least.

The average Minnesota cow is producing very little more than 150 pounds of butter annually. She produced practically as much ten years ago. Where should our education be directed? Wholly towards the future promotion of quality which may insure a cent or two more per pound of butter, or shall we also busy ourselves with the subject of how to make this average Minnesota cow make more butter at practically the same expense?

Many of our dairy farmers are going out of the business because there is so little profit in it. Suppose each cow in their herds produced only fifty pounds more butter per year, would they be going out of the business? Just that much increase would have given them the encouragement they needed. Then if these cows could be made to produce 100 pounds more or 250 pounds of butter annually their owners could not be driven out of the dairy business.

We have scores of creameries operating in our state today which are not supplied with sufficient raw material to enable them to return satisfactory prices for butter fat. Were it possible for the farmers patronizing those creameries to change their methods and secure proper returns from their cows those creameries might be made prosperous institutions.

I believe that the future success of the dairy business in this state depends largely upon our cow keepers getting larger returns from their cows. They are getting the high prices for their butter-fat, but they are not getting sufficient raw material.

The Minnesota creamery patron has been keeping the 150 pound cow long enough to demonstrate that he will continue keeping her (if he keeps any) providing something is not done to change his methods. He is not going to get out of the rut unless some one or something pulls him out.

The gentlemen who have attempted so far to pull him out will agree with me that it is a pretty big task to pull him out too.

How are we going to go about it to increase quantity? It must be a campaign of education. The average cow keeper who is milking the 150 pound cow doesn't have any faith in methods which are more scientific than the ones he is employing, and one cow is just like another cow to him. He is too careless to know whether there is a difference in the individual performance of his cow, and what is still worse, doesn't care whether there is or not. He knows nothing whatever about the test of the milk from his individual cows, and has but little concern about the question as long as the butter maker at the creamery gives him as good a test as his neighbor gets and keeps it right there all the time. This same fellow is often inclined to speak of the dairy business apologetically as he would rather be classed as being in bigger business. He may be a horse breeder, a hog man or best of all he may own a threshing machine. There may be instances, but my personal observation leads me to take the statement that a man can't own a threshing machine and be a good dairyman. I don't know as this is such a strange condition of affairs, however. The results are always diametrically opposed to each other. The first-class threshing machine with the best of care will insure a mortgage on the farm while a first-class herd of dairy cows with the best of care will annihilate any farm mortgage that ever saw black and white.

But why dwell upon conditions which we all know exist? What can we do to improve them? We can keep hammering away at the stupendous rock of ignorance which lies in the path of dairy progress and time will take care of results, providing we use the right kind of tools. I believe that we will have to go right to the doors of the cow keepers of our state and show them their mistake in keeping scrub cows and giving them poor care. I believe we are attempting to shoot knowledge at them from long range with short range guns. We have too long been hunting big game with squirrel ammunition. We may try ever so hard to reach the careless cow keeper with the methods we have been using and we can't reach him because he will not come close enough to us. In the work of the Farmers Institute and the school house meetings we have been getting close enough to him to let him know that we are after him, and doubtless many a shot has been fired with good effect, but still we haven't reached him hard enough. The dairy school has added its share in the campaign, but it has reached only those individuals who were ready to be reached, except as its chief has gone right to the hiding places of the game.

I believe that our next step should be to go right to the farms of our cow keeper and help them to see the folly of keeping cows at a loss. I believe that the state government should, through its various dairy educational institutions send a sufficient number of qualified men right into the creamery neighborhoods to handle the work.

My plan would be for a dairy instructor to go to a creamery or cheese factory and remain long enough to visit every farm in the community. Talk with each patron about his herd and advise him where he can improve his methods. Arrange for two or three rousing meetings while in the neighborhood and show the butter maker how to improve his methods where necessary.

Twenty of these men could be kept in the field a year for fifty thousand dollars, and I believe that you will agree with me that the state could not spend the money to better advantage. I would have these men selected on a strictly civil service basis and to be the best twenty men available in the state.

I would have these men give their whole attention to quality and quantity, and their work would, in view of present conditions, necessarily be largely directed toward the question of quantity. I can see no better way of encouraging the keeping of better cows and the employment of better methods. I believe it would contribute more than any other plan to the establishment of the dairy business of the state upon a firm and lasting basis.

Mr. Slater: I hope we can all go away from this meeting feeling that it has been good for us to be here. Have you any announcements to make?

Mr. Randall: Please remember the meeting in this room tomorrow morning at 9:30. The meetings tomorrow afternoon and evening will be at the School of Agriculture.

MORNING SESSION.

JANUARY 9th, 1907.

Professor Bull: According to the programme this morning's session is under the auspices of the Minnesota Field Crop Breeders' Association, and in the absence of our president, the secretary has called the meeting to order. The programme will be conducted as announced in the little leaflet. Before calling upon the speakers, I am requested by Professor Mayne to call attention to the corn and grain exhibit upon this side of the hall. As the large sign there will indicate, this is an exhibit of the corn and grain grown in the several counties of Minnesota, by the rural school students. Professor Mayne conceived the idea of getting up this contest, early last spring, and at his suggestion Rural School Bulletin No. 2, was written and published. The way this contest was conducted, in short, is this. Each County Superintendent of Schools conducted a county contest, and in some of the different counties there were over a hundred different entries of corn, and many others of oats and wheat,—the contest included only those three grains. From the milling and grain interests represented in the Chamber of Commerce of Minneapolis, there were subscribed three thousand dollars to be given in prizes to these contestants for state prizes, not for the county prizes. The county prizes were to be solicited by the county superintendents through and with the co-operation of the State Farmers' Club. The annual meeting of this club was held on Monday. The prize winners in the county contests were privileged to send their samples to the state contest, under the auspices of the Minnesota Field Crop Breeders' Association. Last year this association elected Mr. Bassett to take charge of this exhibit, and the results of the exhibit you see here around the side of the room. This is but a beginning, but we feel that it

is a good beginning, and it is a beginning of something that is going to be substantial. Next year plans are already laid for a very much larger work. The exhibits will be judged by Mr. Shamel of the Department of Agriculture, Washington, D. C. and the announcements made later. There are some exhibits that have not yet been brought in but will be brought in and on exhibit a little later,—those who, for example, were a little late in sending them in, and we are holding off the awards until they get here.

Now the awards for grain,—for oats and for wheat, and for corn respectively, are as follows: The first prize corn, the first prize wheat, and the first prize oats will get two hundred dollars each; the second prize in each one of these, will get one hundred dollars each; the third prize will get fifty dollars each; the fourth prize, will get ten dollars each; the fifth prize five dollars, and the sixth prize, five dollars. These are well worth going after, and in some counties, as I have said, there were over a hundred entries in corn; there were not as many in the grains. There were in one county that I know of, where they have not as yet had their county contest, over five hundred entries in corn alone. This contest as expressed in these samples here, is not the major part of our work. The study that is followed out in the public schools, as indicated in Rural School Bulletin No. 2, is the major part of the work. This is simply accessory and to show what may be done. In all there were something like sixty counties entered in this contest, that means that there were sixty county superintendents that were active in the interests of agriculture being introduced in the public schools. We have now something over a hundred entries on exhibit, and there is one county yet,—the one that I spoke of, that has over five hundred entries of corn, to report. But this is only a beginning and we hope to have better results next year.

Is County Superintendent Harrington in the room?

A Member: Mr. Bull, Mr. Harrington will be here in a moment.

Professor Bull (continuing): I would like to have Mr. Harrington here to say a few words to you on this subject, because he has been one of the foremost workers in this connection. While we are waiting for him, we will call upon Mr. Bassett, to read the report of the Corn Auxiliary to the Minnesota Field Crop Breeders' Association. The scope of this association is to take care of and improve the grain of Minnesota, and as fast as it is feasible, to organize auxiliaries to care for each one of the crops. The live stock breeders have auxiliaries to their association to take care of the different lines of live stock, and we have a corn auxiliary, that has reported for the past two years. This year, Mr. Bassett the chairman of that committee will read his report.

I take great pleasure in introducing Mr. Bassett.

Mr. Bassett: Before I read my report, I wish that these gentlemen in the front seat would vacate and move back, and let those boys and girls who have come in from the rural districts, come up to the front seat, where they can see and hear everything that goes on here this morning. I believe it is a duty which we owe to them, and I want all of them to come up here on the front seat. If those gentlemen will move back and let those boys and girls come right up here? Thank you.

**REPORT OF CHAIRMAN OF "CORN BREEDERS' AUXILIARY" OF
"MINNESOTA FIELD CROP BREEDERS' ASSOCIATION."**

The United States is pre-eminently an agricultural nation. Her agricultural resources are unsurpassed; yes, not even equalled by any other nation in the world. Our farming or rural population represents today, not one of the most, but the most prosperous, happy, free and independent class of people in existence.

From an economic point of view, no other branch of industry begins to compare with our farm productions, which last season, reached a valuation to exceed one and a half billion of dollars. Secretary Wilson in his annual report of 1905, says, "The grand aggregate of wealth produced on the farms for 1905 exceeds that of 1904 by 4%, is greater than 1903 by 8%, and transcends the census figures of 1899, by over thirty-six per cent, and three years hence, if there is no relapse in this step of progress, we may look back and by adding the annual wealth produced, will find that the farmer or 35% of the population, has produced in the past ten years an amount of wealth equal to one-half of the entire nation's wealth produced by toil, and composed of the surplus and saving of three centuries. Notwithstanding the tremendous accumulation of wealth, our agricultural possibilities are yet in their infancy. With the advent of scientific method and more intelligent management of our farms, the producing power of the land is being increased and maintained to such an extent, as was not even dreamed of in former years. Of all this vast amount of agricultural wealth, no one crop is so potent in its production as the corn crop, and no other crop is more susceptible to improvement by selection of seed and improved method of cultivation.

The breeders of live stock in this state early came to realize that to get the best results, they must work together toward one common end. This led to the formation of the Minnesota Live Stock Breeders' Association, whose object is to promote in every possible way, the best interests of the live stock breeders of Minnesota,—a very commendable cause. The American Shorthorn Breeders' Association early came to realize that to attain the highest degree of perfection in their Shorthorn breed, they must have uniformity in color, type and conformation, and this could only be accomplished when the different breeders were working in harmony along certain well defined lines with a definite type or standard for an ideal. I do not wish to convey the idea that there can be no improvement by haphazard breeding for a good individual will always improve his kind. There may be, and often is improvement without uniformity in either type, color or characteristics. However, I do believe that a far greater improvement may be expected where the breeder of either plants or animals recognizes some of the well defined rules relating to the selecting and mating of either the plant or animal which he wishes to perpetuate.

It may seem strange to many that I am laying so much stress on the live stock interests of the state. In doing this, I simply wish to call your attention to and emphasize the methods employed in bringing our live stock industry to the high degree of perfection which it now occupies.

What the Live Stock Breeders' Association has done towards the improvement of live stock in Minnesota, the Corn Breeders' Auxiliary of the Field Crop Breeders aims to do toward the improvement of our corn crops.

In fact we bear the same relations to the Field Crop Breeders' Association as the Minnesota Swine Breeders' Association, or the Minnesota Sheep Breeders' Association bear to the Live Stock Breeders' Association of the state. They aim to improve a certain class of live stock and we aim to improve a certain class of field crops. The corn plant is peculiarly sensitive to a change of climate, however small that change may be. In a state like Minnesota, with such a wide variation of both latitude and soil, it is very plain that no one variety of corn can be adapted to all conditions and parts of the state. A variety that will do well in the southern tier of counties, cannot be regarded as a safe variety for central Minnesota, and a corn that will ripen in central Minnesota, is too late a variety for the Red River Valley or Duluth district. It is very evident, then, that to get the best results, we must have special varieties for special localities. It is not enough that we select a good breed of cattle to produce milk or beef. We must go farther and select good individuals with the breed, if we would get the greater improvement. So it is in improving our corn, we must not only get a variety that is a good yielder and adapted to our conditions, but we must go still further and get the best individual ears in that variety. We might with profit still go a step further and get the best individual kernels in the ears.

Our work consists in helping the farmer in each locality to find just such a variety, and show him through the medium of these annual meetings and local meetings, and the distribution of literature relating to corn breeding and culture what type to select for, how to pick, store, cure and test his seed, how to plant, cultivate, harrow and grow, not twenty-eight bushels of corn as is the ten years' average yield of Minnesota, but double that yield, which is not an excessive yield for our state. We hope to get at least one or more farmers in every township in the state to be a seed corn grower and breeder.

Now I want to say just a word in regard to the exhibit over there. Mr. Bull has gone into the matter in detail and given you a general idea of what it is. I want to say that while the exhibit is not as large as we had hoped for, it is gratifying to me to know that it is as large as it is. Last evening we had forty-one samples of corn on the table, and this morning we have something like ten or fifteen more samples brought in, so our seed corn will amount to something like fifty or sixty samples, representing in all something like forty different counties in the state. I think that means a great deal, and I don't believe that three thousand dollars has ever been spent in the state of Minnesota that will bring greater returns to the farmers of Minnesota, than the spending of that three thousand dollars to stimulate the production of a crop, not only of corn, but of the small grains in the state. That exhibit of corn would be a very creditable exhibit to be placed on the tables at our State Fair, and I think the school children of the state should be commended for what they have done toward making this meeting a success. (Applause.)

Professor Bull: Several members of the Live Stock and other Associations yesterday called my attention to the fact that we ought to do more in this association in connection with the work that we are trying to carry on as represented here and to extend that not only to include more of the counties in connection with the rural schools, but to include the older people. They told me that the State Fair was a little too early to show the best possible corn product for Minnesota, and they said we ought to do more.

Now, there is one way that we can do more; and there is one way that many of you can help us to do more, and that is, by becoming members of our association and actively engaging in this work. On the stimulation of those few remarks that were made to me yesterday, I have asked a young man from the college to come over and take subscriptions for membership fees. The fees are one dollar for an annual membership, and your receipt for that sum this year will entitle you to last years' annual report, the second annual report, as long as they last; and the third annual report; the printer has been hampered somewhat, I am sorry to say, and the third annual report is not here. I expected to get each report here, the three annual reports, but Mr. Miller, as you see is walking down on the side there, and he is ready to take your membership fees, and I know you are interested enough in this work to become members of this organization. The Minnesota Field Crop Breeders' Association is a rather cumbersome name, but we have a big work, and the name is only represented in size of the size of the work that is to be taken up by this association. The different associations have their different fields—special fields to take care of. The live stock association takes care of the live stock; the agricultural society takes care of the State Fair, and they do it well; and other organizations, the horticultural and dairy interests, have their organizations, but the field crop interests have not been heretofore represented as they should have been. Now, we have got a very good start, and an organization to take care of and promote the interests of these particular crops, and it is up to the members here and the people of Minnesota to keep that organization alive. It is going to live anyway, but we want it to realize its highest possibilities, and to put it in better shape in the state than it is at the present time.

Professor Bull (continuing): Has Mr. Harrington come into the room yet?

A member of the audience: Mr. Chairman, I am not a member of the Field Crop Breeders' Association, but I would like to make a suggestion.

Professor Bull: Certainly.

The member: I don't know whether it is in order or not, but there are lots of school districts in our state that know nothing about this contest, and there are lots of pupils that would enter this contest if they had the chance. Why wouldn't it be a good thing to send a circular to each rural school teacher, so that these pupils could get in touch with this meeting? Our county superintendent is a good man, but he is a city man, and he is not in sympathy with this movement so that our rural schools don't know what is going on. We are interested, but our neighbors all around are not.

Professor Bull. This man has hit the keynote of the situation. We don't want to take up too much time upon this subject. It is important, but we must not hold over our time limit, but I want to say this, that that man has hit the key note of the whole situation. It rests with the county school superintendents to get up these exhibits. County superintendents who are city bred are not in sympathy with this movement, and have not known how to take care of it. They receive copies of Rural Bulletin No. 2, and let them lie dust covered in their offices and didn't even distribute them. Now then the place to remedy that is at the polls. Note the county superintendent that is interested in this work, and who will promote it, and stand by that man.

I hope Superintendent Harrington will come into the room before we get through with the morning's program, as I very much want you to hear him, and hear what he has done in McLeod county.

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Professor Bull: Now we have a most interesting topic as the subject of the next address, "Corn and Its Improvement." This association has been for the past two or three years making every possible effort to get this man here to discuss corn with you and to you. He is well able to discuss the subject; he has been the corn expert for the Illinois Experiment Station,—one of the greatest corn states in the Union, and has gone to the department of agriculture, and has accomplished great results there with the tobacco crop, but this morning he will talk to you upon "Corn and Its Improvement." Mr. Shamel.

CORN AND ITS IMPROVEMENT.

BY A. D. SHAMEL, ASSISTANT DEPT. AGRICULTURE, WASHINGTON, D. C.

Mr. President, Ladies and Gentlemen: I am very glad to be here this morning to talk with you for a little while on this subject of corn and its improvement. I do not expect to present any theoretical discussion of breeding in this connection, but simply to give you as nearly as I can and as briefly as possible, and as clearly as lies in my power, a few suggestions regarding the treatment of your seed corn, this spring; not next year or at some future time, but this spring, for the purpose of getting better seed, a better stand, and an increased yield of corn per acre in Minnesota. The corn crop of Minnesota is next to importance to the wheat crop. Last year there were about forty-five million bushels of corn raised in this state. The production of corn in Minnesota is steadily increasing, and it is important from the standpoint of its use as feed for the live stock in the dairy, for beef cattle, hogs and other kinds of live stock. The importance of the industry cannot be over estimated. I want to say this,—I don't expect to talk about it this morning, but I want to present this fact that has come under my observation in the last few years, and it may be interesting to you here in Minnesota, and that is that your farmers here are raising corn and grain year after year on the same land in this state. Now, down in Illinois we have done that thing for about fifty years and more. Over in Ohio and Indiana they have done it longer than we have in Illinois. The pioneers who settled those states thought that the fertility of that black prairie soil was almost inexhaustible. We, the children of those pioneers have begun to find out, in the insolvent farms that they have left us, that the fertility of that soil was not inexhaustible. The yield per acre of corn in those states, as long as the land has been cropped continuously, has been steadily reduced,—has been steadily getting less year by year. Now you cannot afford to do that here in Minnesota. In some sections you have been raising wheat, and you have been raising oats, and you have been raising corn on the same land year after year without returning very much of this crop back to the soil in the form of manure. Now, you cannot continue doing that without disastrous results.

The production of corn in the United States in 1905 reached a total of about two and a one-half billion bushels, having a value of over one billion dollars, while we are told that for the past season the total yield will reach the three billion bushel mark; amounts which we can but partially comprehend. Our forefathers little dreamed, as they witnessed the scattering patches of this American crop grown by the Indians at the time of the settlement of our country, that corn was destined to become the most important crop of the new world, a crop to which more than all others, our prosperity and civilization are indebted. The hardy pioneers who settled the great west, found that the corn plant thrived and produced more abundant crops in the Mississippi Valley, than where it was found growing by the first settlers of our country. It was a source of food for both man and beast, the mainstay of the men who subdued the unbroken soil of this great section of the country which has now become the most important agricultural part.

The tremendous increase in production of corn decade by decade, from the time corn growing was introduced into the great corn belt until the present day, has been largely due to the bringing into cultivation of heretofore undeveloped lands. Year by year the amount of uncultivated corn land has been growing smaller and smaller, until at this time there is comparatively no large areas in the United States which remain to be developed for the culture of this crop. Of course it is a well known fact that large amounts of land in total, not now growing corn or other crops, is gradually being brought under cultivation by drainage, irrigation, and other means, but as a whole the richest corn growing sections have been opened up, settled, and are now being cultivated. It is not likely that there will be any great addition in the corn lands in the near future in this country, especially in view of the fact that upon the introduction of the rotation of crops and new crops, considerable areas now cultivated in corn will be devoted to the growing of other crops such as forage crops, both for hay and soil fertilization purpose, wheat, oats, and other small grains.

The pioneers were not concerned with the questions of preservation of soil fertility or allied problems. It was necessary for them to cultivate the largest fields possible, and once under cultivation to continue the growing of corn year after year, in order to get the largest possible returns for their labor in the shape of a crop that could best be utilized under the limited facilities for marketing at his command. The driving of herds of corn fed cattle and hogs to market a hundred miles distant are traditions which are not so far back in the history of many communities in the corn belt. The fertility of the virgin soils was considered inexhaustible in the early days, and the continued culture of corn on these soils proved a means of establishing a home, educating the children, and the making of the wonderful advancement of our country.

Now that most of the new lands adapted for corn growing have been taken up, the question arises, will there be a continued advance in the production of corn commensurate with our increased needs for this crop. Not only does the increase in our population demand a continual increase in the production of corn from the standpoint of human food, animal feeds, but owing to continued experimentation and invention many new and important uses are constantly being found for corn. One illustration fresh in our minds may suffice to show the importance of this factor in the future of the corn crop. It is the use of denatured alcohol as a source

of fuel, energy, and light. There is little doubt but that the corn crop will prove, as heretofore, the most important of the sources of alcohol. The use of the denatured alcohol is destined to become in time universal on the farms as well as in the factories, as a source of power. In view of the fact that we are now consuming the present crop, at profitable prices to the grower and consumer, where will the additional amount of corn be secured for the new industries dependent upon it?

In the writer's opinion, the demand for increased production must be met by an increased production per acre, dependent upon careful soil fertilization, better methods of cultivation and the improvement of the crop by breeding and seed selection.

IMPORTANCE OF SOIL FERTILITY.

In the first place, we have, for the most part, been practicing continuous cropping in the corn belt. In many instances the writer is familiar with large fields which have been growing grain crops, for the most part, corn, for over fifty years, without the return to the soil of any portion of these crops as manure or other fertilizers. The deterioration in productiveness of soils so treated is so marked and well known that it is not necessary to discuss or emphasize it. Some of the causes for the so-called running out of the land due to continuous cropping, are no doubt owing to a lack of knowledge of the soil, but there is no doubt but that such a practice ends in bankruptcy for the farm and farmer.

The writer has in mind an illustration of this discussion not heretofore published to his knowledge. In New England, from the time or before the Revolutionary War until about twenty years ago, a period of about one hundred years, one of the most profitable crops in certain sections in the Connecticut Valley, and in Vermont and New Hampshire, was rye. The rye was grown for the purpose of the manufacture of gin. In many of the small towns of this region, the writer has seen the deserted old distilleries which speak eloquently of more prosperous days. The gin was shipped to the West Indies and exchange for sugar, molasses, coffee, and other sorts of profitable merchandise. In fact the rye crop was so profitable when grown for this purpose that it was grown year after year in the same soil regardless of its eventual effect on the soil fertility. In time the soil began to run out, and eventually became so unproductive that whole regions were abandoned by the farmers, and are now covered with a young forest. This practice of continued cropping virtually paralyzed the agricultural interests of the sections of New England which produced the rye, from which they have as yet not fully recovered. This object lesson could well be investigated by other grain growing regions, before it is too late to apply a remedy.

INFLUENCE OF CULTIVATION.

The increase in yield per acre of corn can be affected by the adoption of improved methods of cultivation. This subject is now being investigated more carefully than heretofore by scientific investigators, who have already found that we have heretofore attached too little significance to this matter. The introduction of improved and economical implements of tillage, has made it possible for us to more carefully and intelligently

handle the soil from the time the land is prepared for planting until the time of the last cultivation. The two most important advances made along this line, in the opinion of the writer, has been the use of methods for deep and thorough preparation of the seed bed, and the adoption of the practice of shallow and frequent cultivation.

VALUE OF IMPROVED VARIETIES.

The third important factor in producing increased yields per acre, and to the writer, the most important, is the breeding of acclimatized and improved varieties of corn for every corn growing district. No matter how great the fertility of the soil, or how careful the cultivation of the crop, without good seed the best results cannot be obtained. The increased value of land at the present time and the cost of labor, make it necessary for us to increase the profits for every acre in order to make the business a profitable one. The increase in yield per acre due to the use of improved and highly bred seed, is pure additional profit, as it costs no more to raise a good than a poor variety of corn. The increase in yield of five bushels per acre on eighty acres of land planted to corn, due to improved seed, means an additional yield of four hundred bushels and an added profit of about two hundred dollars for the crop. If the same increase was secured over all the corn lands, it would mean a total increase in profits of about a quarter of a billion dollars to the corn growers of the United States. This is no idle guess, for it has been carefully estimated by the board of agriculture in one of our most important corn states, that an increase of over five bushels to the acre has been added to the average yield per acre in the past five years, as the result of the use of improved seed by the farmers.

It would be desirable to discuss here more fully the factors of soil fertility and cultivation, but in view of the fact that the object of this article is to discuss somewhat in detail the questions of seed and breeding of corn, it is not possible to devote further time to the problems of the soil. It might be said, however, that the time of blindly following along long practiced methods has passed, and the successful corn grower of this generation must study his conditions and adapt his methods with energy and intelligence to the present conditions.

CAUSES OF LOW YIELD PER ACRE.

The average yield of corn per acre in 1905 in the United States was about twenty-nine bushels, which is the highest average yield in this country in the last ten years. In 1901 the average yield dropped as low as seventeen bushels per acre. The highest average yield per acre of any of the great corn states in 1905 was about forty bushels per acre in Illinois. In this season there were many farms in all the corn districts that produced an average of over seventy-five bushels per acre, in some cases reaching an average as high as one hundred bushels. These farms producing the high average yields were not in many instances of more than average productiveness so far as the soil conditions were concerned. Indeed, in cases known to the writer, the fields producing the largest yields per acre are considered to have an inferior soil, to adjoining fields which produced less than half the average yield of corn stated above. Frequent

observation has shown in nearly every neighborhood, two farms side by side, with the same soil condition, the corn crops treated alike from the time of the preparation of the seed bed until harvest; yet one of these farms produces an average yield of seventy-five bushels to the acre, and the other twenty-five to the acre. If the fertility of the soil, and the cultivation of the crop is similar in both cases, what is the reason of this tremendous difference in yield and profit? Of the several causes, the two important ones above all others contributing to the low yield, to which every corn grower should give his closest attention, are, first, a lack of a uniform stand, and second, the use of unimproved varieties of corn.

LACK OF UNIFORM STAND.

The careful observations of the writer in Illinois and later in the more extensive tests made by Professor Holden of the Iowa Agricultural College in Iowa, showed that there is an amazing difference in the stands of corn planted under the same conditions. As a whole, it was found that there is not more than an average of about sixty-two per cent of a perfect stand in the corn fields of these two states. The main causes for this deplorable condition of stand are, first, irregular drop in planting, and second, the use of seed corn of weak vitality.

The irregularity of the drop in our improved planters is due largely to the difference in size and shape of the kernels of seed corn. This difference can best be seen by examining a lot of one hundred ears of corn laid out side by side, where the difference in the size and the shape of the kernels on the different ears can be carefully observed. In the majority of cases it will be found that there is a very great difference in both size and shape of kernels on the different ears. Even in the individual ear there is frequently considerable variation in the size and shape of kernels, but usually much less than as between different ears. The kernels on the tips are usually smaller and more rounded than the kernels on the middle of the ear, while the kernels on the butt, are usually somewhat larger, more irregular in shape and structure, than the middle kernels. When seed ears having different sized kernels are shelled together, it is impossible to expect to get a regular drop, the large kernels dropping too few in the hill, while too many of the small kernels are dropped by even the best planters.

The difficulty of irregular planting can be largely avoided and an improved stand secured, by first shelling off and discarding all of the irregular tip and butt kernels from the seed ears; and secondly, by arranging the seed ears into three groups, large, medium and small sized kernels. The ears having the largest kernels should all be shelled together, the medium sized kerneled ears together, and the small sized kerneled ears together. Thus three grades of seed, depending on the size of the kernels, will be secured. The planter should then be tested, using different sizes of plates in the planter boxes, until the proper size and arrangement of plates are found for securing a uniform drop, at least ninety-five per cent of a perfect drop. When planting each grade of seed, the proper sized plate should be used, entailing very little additional labor and, as proven by overwhelming experience, securing a better stand of corn. When possible, this method may be improved on by the use of a seed grader, built on the same principle as a potato grader, and arranged

to separate the kernels into different grades, according to size. A little care in shelling the seed corn, and testing the planters, has been found to be one of the best investments that the corn grower can make.

The second and possibly the most important cause of poor stands of corn is the use of seed corn of weak vitality. The vitality of the seed may have been injured by a number of causes, chief amongst which are, immaturity, cold weather before the seed has been thoroughly dried out, and damage by rain or snow, insect enemies and fungous diseases. It is practically impossible for even the most expert judge to decide anything regarding the vitality of seed corn from the appearance of the outside of the ear. A close examination of the kernel, opening it with a sharp knife, and studying the color and appearance of the germ in a good light, is helpful in discovering the kernels that have been so injured that they will not grow when planted. Nearly every one is familiar with the appearance of the germ of a kernel of corn that is dead, but there is no one who can say with certainty the actual comparative vigor of germination, or viability of a kernel of corn without a germination test.

So great is the importance of using seed corn of strong vitality, and of knowing the vitality of the seed before it is planted, in order to discard the poor ears, that it is absolutely necessary that every ear of seed corn be tested before it is shelled for planting. The practical value of the germination test, has been demonstrated over and over again, and is so well known that it is unnecessary to emphasize it here. A description of the method of making the germination test is hardly necessary owing to its wide use and the extended descriptions that have been given by the press and in lectures. The writer, however, thinks that in view of the publication of the many different methods advocated by different writers and investigators, that it may not be out of place to review briefly the method which in his opinion, is best, most practical, and certain of results.

The method of germination of seed corn which we may call the Iowa method, was introduced by Professor F. G. Holden, of the Iowa Agricultural College. It provides for the use of a shallow box, nearly filled with damp sawdust, over which is tightly stretched a cloth marked off in little squares. Each square is intended to hold the sample kernel from a single ear of seed corn. The squares are all numbered. The seed ears are first laid out in order on a convenient table or shelf, where they will not be disturbed. All of the ears are numbered or arranged in a definite order so that it is possible to refer to any particular ear in a moment. A sample of five or more kernels is taken out of the different parts of every seed ear, and the samples are placed in the squares on the cloth of the germination box, each sample in a numbered square, corresponding to the number of the ear from which it was taken. The kernels are laid germ side up, on the cloth. After all of the samples are filed in their respective squares according to numbers, a second loose cloth is laid gently over them, and the remainder of the box filled in with more moist saw dust. The filled germinator box is now placed in a warm room where it can be kept under favorable conditions for the sprouting of the seed. After ten days, or less, perhaps, the upper layer of sawdust should be removed, and the samples uncovered. An exact map of the vitality of the seed will be found. By an examination of each individual sample, tracing those that failed to germinate, or of weak germination, back to the ears from which they came, the seed ears of poor vitality can be discarded, and seed of known vigorous vitality saved for planting.

The cost in labor or material for this test is so small that it need hardly be considered. When it is remembered that about twelve ears will furnish seed enough to plant an acre in the corn belt. The practicability and the importance as well, of this test can be more easily understood.

A perfect stand of uniformly productive varieties of corn in the corn belt would mean an average yield of about three times the present yield, with no more expense in production. In face of this fact, no one can deny the importance of every effort to secure a uniform and perfect stand of corn.

UNIMPROVED VARIETIES.

Several attempts have been made to classify into variety classes or groups, the strains and types of corn grown in the United States. The attempts have been more or less of a failure, and of little vital use to corn growers. The facts are, that by reason of the rule of cross fertilization, any variety is likely to get swamped and lost if not protected from cross pollination. Corn is largely cross pollinated and this crossing is known to take place over long distances, many instances having been observed where some of the pollen of plants of one variety has been carried by the wind over an unobstructed stretch of a half a mile and even further, and cross-pollinated plants of another variety. It can readily be seen, then, that when neighboring farmers plant different varieties of corn, they quickly become mixed by cross pollination, if some means is not adopted to keep the varieties pure.

It is only within comparatively recent years that any very systematic attempts have been made to produce improved varieties of dent corn. While important work along this line was begun as early as about 1837, the effects of the pioneers of corn breeding have hardly begun to be appreciated. The real impetus for the development and use of improved varieties of corn began about ten years ago, due largely to the organization of seed corn breeders and corn growers' associations. There has been a lack until recently of highly bred varieties of corn to choose from, so that the corn grower has not been able to secure in any large measure of cases, improved seed of established varieties of corn adapted to the grower's local conditions of soil and climate.

The use of unimproved varieties is a primary factor in the present condition of low average yield per acre of corn in the United States. The particular weakness of this so-called improved seed corn lies, first, in its inherent lack of productiveness due to lack of breeding and seed selection; and second, to the fact that a large amount of seed corn is not adapted to soil and climatic conditions in which it is grown.

The most serious fault with the unimproved seed, and with some of the so-called improved seed corn varieties, is with the lack of productive capacity. The object of all economic corn growing is to produce the greatest possible value per acre, or the largest possible yield per acre.

The live stock world has forged ahead of the corn growers and breeders in this regard. The cattlemen have bred for meat production, milk or butter fat production, so that now no intelligent man would consider breeding or raising cattle for breeding or dairy purposes, without selecting the breed best adapted for his particular purpose. In corn growing, however, we for the most part, give little attention to the variety which will

give us the largest possible yield of shelled corn, or spend but little time in investigating the subject.

The tremendous per cent of barren stalks, irregular plants and dwarf ears in our corn fields is mute testimony of the present unimproved condition of the seed corn in general use. The average size and shape of ear produced in our fields is so small and undesirable that we all are ready to disclaim it, but the fact remains that there is such lack of uniformity in our corn fields as respects the kind of ears produced by the individual plants, and that it behooves us all to give this matter careful attention.

The adaptability of a particular variety of corn to the local conditions of soil and climate on any particular farm must be taken into consideration. Many sections of this country are now growing types of corn inferior in every respect to certain established varieties, simply because the growers are not awake to the comparative value of the other varieties. For instance, in many sections in the north, where flint varieties are being grown for feeding purposes, the growers could more profitably use improved dent varieties by adapting them to northern varieties by breeding and good selection.

Seed corn of new varieties should not be used extensively, except for trial or as a basis for breeding, in any locality, until it has been proven that they are adapted to the soil and climatic conditions of that region. In the past few years many farmers have secured seed corn from dealers or seed corn growers for planting their entire crop, without knowing anything about the adaptability of this seed to their conditions. The results have been, in many cases, disastrous to the farmer, and are now beginning to react upon the seed corn growers and breeders. The sooner the necessity for care in the use of new varieties of corn under new and untried conditions is recognized and understood, the better it will be both for the farmer who buys the seed, and the farmer who raises it for sale or the dealer who handles it in the markets. In general the writer believes that no new variety or foreign grown seed should be used extensively until proven by experimental tests that it is adapted to the soil and climatic conditions where it is to be grown.

On the other hand, every farmer possible should test the improved varieties of corn, and find by actual test the most productive sort for his particular conditions. The state experimental stations, the county test farms, and other means furnish valuable data as to the general merits of the established varieties, but the farmer can never be certain of the best variety for his conditions until after careful test on his own farm. These tests ought to continue in the case of any variety for at least three seasons, if really valuable results are to be obtained.

PRODUCTION OF ACCLIMATIZED VARIETIES.

Every farmer should raise his own seed corn, so far as possible. In the first place the most productive variety should be secured, after which by following the methods of careful seed selection outlined in this paper, the variety best adapted to the conditions of soil and climate can be gradually improved and made increasingly productive. If, as in a large number of cases, it is not feasible for the farmer to raise his own seed corn, he should arrange to secure from a corn breeder, whose conditions are similar to his own, seed corn which has been found by experimental test to be valuable.

As a rule, however, we are coming to believe that the different varieties of corn, can best be improved by breeding and seed selection under the conditions where these varieties are to be grown. A logical following out of this conclusion is that every farmer should be his own corn breeder, because the soil conditions on every farm are different from those of every other farm. The increase in yield per acre, through the use of new and improved varieties of corn, can best be effected by the corn growers as a whole interesting themselves in the improvement of their seed corn. The amount of time and money necessary for this purpose is very small as compared with the value of the results to be secured. It is the only way to advance and to secure greater returns in value of corn per acre.

The adaptation of corn to new conditions can well be illustrated by a case under the writer's observation. In 1904 a few select seed ears of an established and well known variety of dent corn grown in Illinois was taken to the Connecticut Valley. The first season only a few stalks and ears matured in the entire field under the new conditions. These mature ears were carefully picked out and saved for further planting. The following season about one-half of the crop matured. The earliest plants and ears were again carefully selected and saved for planting last season. The past season practically the entire crop fully matured, under conditions where it was thought impossible to mature dent corn. A measured acre gave a yield of about one hundred and twenty-five bushels of shelled corn per acre, while the ordinary flint corn grown on the same farm gave a yield of about half this amount under similar conditions. The time of maturity of this variety has been shortened about two weeks by the process of selecting the early maturing ears every season, while the productiveness of the variety has been increased at the same time.

In testing a new variety, enough seed should be used for planting a sufficient area so that an adequate selection of seed ears can be made, should it be desirable to make such a selection. At least one acre, and better still five acres, should be used for this purpose. This field should be isolated, either by windbreaks or distance, from other fields of different varieties, so that a harmful mixture cannot occur. At about the time of maturity or not later than the first of October, a most careful study of the plant should be made, and the early desirable plants marked so that they can be distinguished when the corn is husked. When the ears of the select plants are husked, and dried, a second selection can be made based on the character of the ears and the kernels, for final planting.

The value and efficiency of this plan of adapting a variety to new conditions depends on the ability of the grower to select and save for seed the best matured ears.

IMPROVEMENT OF VARIETIES OF CORN BY SEED SELECTION.

The improvement of our established varieties of corn as well as the production of new varieties, has been the subject of almost endless discussion in the corn belt for the past fifteen years. These discussions have aroused a great general interest in the subject which in the long run must be beneficial to this industry. Like the beginnings of most other movements of this sort, mistakes have been made, complicated methods of breeding have been tried, effort has been wasted on unproductive types of corn, and previous standards of selection have been upset as a result of experience.

However, this experience has been the cause of great good to the corn grower's interests. Without it, little progress might have been made. But it is now time for us to analyze this experience, look at the problem of improvement of corn squarely and without prejudice, lay aside non-productive methods, and adopt that plan of selection and breeding which the combined experience of breeders and growers has shown to be practicable and productive of results.

In the first place the development of improved varieties of corn is not a complicated subject with which the few can hope to deal and achieve results. It is not a subject of profound and intricate mysteries, which only the recluse or student can hope to study. It is not a subject in which the rule, the scales, the complicated records, the involved methods, the score cards or theories of breeding are the predominate or most important feature. It is an intensely practical subject, in the mind of the writer, the principles of which are simple, and as easily understood as the principles of the breeding of live stock, where the great results have been accomplished by practical stockmen who were thoroughly in love with their work and the breeds of live stock with which they were concerned.

The writer believes that the primary factor of success in corn breeding is the intense interest of the corn breeder in the corn crop or variety with which he is working. The corn breeder whose interest lies primarily in selling seed corn, and who does not get thoroughly imbued with a sense of love for the work and the corn plant, who does not live amongst the plants as they are growing in the field, and the ears after they are husked, who does not instinctively spend every possible moment with his crop, will never achieve any important or lasting results so far as the real improvement of corn is concerned.

A study of the really important breeds of corn that have been produced in the last century, and of the lives of the men who produced them, are conclusive proofs of this statement. Leaming, Riley, Raid, Chester, Coolidge, and other corn breeders whose names will live as a result of the varieties of corn they have produced, were natural corn breeders. They probably knew little about any theories of varieties of breeding and the only implements they used were their minds, eyes and hands. A careful study of their methods of breeding, if we could call them methods, would be a valuable lesson to every man who expects to undertake the breeding of corn.

The writer does not wish to disparage in any sense of the word the efforts or the work of a single farmer interested in corn breeding. Every sincere effort in this direction is helpful to the cause, and may help in the progress of this work. We are just in the beginning of the study of this plant, as yet we are partially groping in the dark, so that any light on this subject must necessarily be of value and importance. It is time, however, that we survey the field in the light of our past experience, and adopt and utilize those plans for improvement that we believe will most surely, quickly and effectively achieve results. If our progress means anything, it ought to be that we can achieve results in five years that took ten years in the past.

In beginning the work of improvement of a variety of corn, the prospective breeder should adopt an established variety, which by test has been found to be best adapted to the breeders' conditions of soil and climate, and to the purpose for which the corn is grown. After the variety has been selected, the most important problem for the breeder to solve is to secure a

small field of about five acres in which the corn plants will be projected from cross-pollination with the other varieties. If there is no possibility of protecting an isolated field from foreign pollen, the breeding patch can be located in the middle of a general field, providing all of the field is planted with seed corn of the same variety as that selected for breeding. The breeding patch, planted from specially select seed, can usually be located so that if twenty-five or thirty rows of the same variety are planted on either side, the plants from the select seed will be protected from cross-pollination with the other varieties. If possible, however, the isolated breeding patch should be adopted in order to prevent injurious cross-pollination.

The breeding patch should receive the same care and attention in the preparation of the soil, cultivation and other processes of culture, as the general crop. It is not a good plan to excessively fertilize or otherwise give unusual care to the breeding patch, other than the best ordinary methods of cultivation. At about the time the ears begin to shoot, before the pollen begins to fall, the breeder should carefully detassel all of the inferior plants in the breeding patch, in order to prevent the pollination of desirable ears by the pollen from inferior plants. From this time on, the breeder should carefully watch the plants in the breeding patch, going over the patch as often as possible, in order to come to know the character of the individual plants. As the ears begin to mature, the best plants should be marked, so that they can be harvested separately from the remainder of the patch.

The success of the breeder will depend on his ability to pick out the best plants. This may be called luck, intuition, experience, training, or by whatever term may suit one's fancy best, but the fact remains, supported by incontrovertible evidence, that herein success lies, in the picking out and saving for seed, the best plant or plants.

The final selection of seed must be made after the select corn plants have been marked, and the ears laid down side by side in good light. Here again the breeder must be able to pick out the best ears, which ability is only gained by experience and extended observation. The breeder must know, the moment he picks up an ear of corn, the probable productiveness of the ear. This knowledge is instinctive and without which the prospective breeder had better choose some other occupation. It is true, of course, that no one can tell the exact degree of productiveness of any ear of corn until it has been tested. For this reason, it is desirable to test part of the seed of every select ear in individual rows in the field, in order to get an accurate knowledge of their productiveness. This plan necessitates testing portions of the select ears the first season, saving the remainder for planting in the breeding patch the following season. After the test rows have been harvested and the productiveness of the seed ears established, the poor ones can be discarded, and only the remnants of the best ones used for planting the second season. In general, however, a true corn breeder knows a productive ear from an unproductive one, and his selection is usually based on standards in his mind which he may not be able to express, but which when carried out result in better varieties of corn.

The object of corn breeding is the securing of increased yield or value of corn per acre. This is the standard which all breeders must strive to maintain clearly in their own minds. Productiveness should be the motto and watch word of the corn breeder, as his success will depend on just the degree of productiveness which his variety attains. Early maturing varie-

ties of corn are now the crying need of the corn belt. It seems that some of the methods of breeding some of the established varieties have resulted in late strains, which are proving to be detrimental to the interest of the corn growers of these varieties. The breeder of early maturing productive varieties must be of service to every one concerned. If there is one need in the existing corn varieties, it is for earlier strains which will certainly be productive of marketable corn every season.

In general successful corn breeding can be carried on in a small field, about five acres being a desirable size, which is protected from foreign pollen, and in which the greatest possible care and most possible time is spent in the study of the plants and ears.

THE SELECTION OF SEED CORN.

What constitutes an ideal ear of corn? The answer to this question must be found by every prospective corn breeder or actual breeder, if he hopes to succeed. Without an ideal in mind it is not possible to make a satisfactory selection, and little progress can be made by the breeder or grower in improving the seed corn. The importance of having an ideal type of ear in mind that is most desirable for saving for seed can hardly be questioned.

The characteristics of the ideal ear of corn depend on several conditions, as the conditions of soil and climate, the purposes for which it is produced, and the variety selected for growing. The characteristics of the ideal ear for Minnesota are different from those in Oklahoma, of an ensilage corn from a corn raised for direct sale, and of a dent from a flint variety, as a Boone County White from a Reid's Yellow Dent.

There are, however, certain broad general characteristics of seed corn which apply to all conditions and all varieties. They are, (1), maturity; (2), vitality; (3), productiveness; and (4) variety characteristics.

Maturity indicates adaptability to the conditions of soil and climate under which the corn was produced. An immature ear of corn should not be selected for seed, because, first, it is not adapted for growing under the conditions in which it was produced; second, the vitality of the seed of immature ears is likely to be seriously injured before the seed is planted; and third, immature seed corn lacks in the supply of plant food for the young plant and is almost sure under ordinary conditions of planting to produce weak and unhealthy plants. A sound, firm, thoroughly mature ear indicates that the variety is suited for growing under the conditions that it was produced; that it will produce a crop of high grade, marketable corn, and that it is likely to be safe for planting so far as vigor of growth is concerned.

Vitality, referring to the degree of vigor of germination and growth of the seed, is all important to the grower. It is not enough to know merely whether the seed will or will not grow, it is the vigor of germination and growth, that indicates the resistance of the plants to disease or unfavorable conditions, and in the end, the yield of corn per acre. As stated before in this article, every select seed ear should be tested for vitality before planting each season. Most people wait until the corn is planted to find out the vitality of seed corn. This plan is uncertain at best, and is likely to cause great loss to the grower. In the germination box, not only the dead ears may be thrown out, but the weak sprouting ears, which usually

produce the scrub plants, may be discarded. Every seed corn grower should be required by law to test his seed corn before sending it out for planting to purchasers, and furnish the buyer with the result of the germination test. It would be a protection to both the seller and the buyer. The writer would recommend the adoption of a plan of germination test for seed corn sold by breeders, by all seed corn breeders' organizations. If the members of these organizations would adopt a satisfactory plan of furnishing the buyers of their seed corn with a germination test, the rest of the seed corn breeders and growers would be compelled to follow their action in a short time.

Productiveness, referring to the productive capacity or rate of yield for the ears of seed corn, depends on characteristics of the seed ear, which we recognize as those of an ideal ear of corn. These characteristics are not fully known in all varieties, and a most important service could be rendered to corn growers by the breeders, experiment stations, or departments of agriculture, in correlating definitely the characters of ears of corn in different varieties with productiveness. The score cards are long steps in this direction, and they are the best guides we have up to this time, for the selection of productive ears of corn. Just how much, however, the nature of the indentation in dent varieties, the covering of the tips and butts of the ears, the shape or size of the kernels, of the different varieties, have to do with the yielding capacity of the seed ears, cannot be settled and are likely to be mooted question until the different types of ears and kernels are comparatively tested in the field for several seasons. The importance of the shape or size of ears, the shape or color of the kernels, the filling out of the tips and butts of ears, or other characters depends absolutely on their relation to productiveness. There are several characters of productive ears of corn that are pretty well established by practical experience, which after all is the final test of all experiments. The writer believes that the best ear should be, first, perfectly sound and firm with the largest size that will thoroughly mature in the conditions in which it is grown, cylindrical in shape, with straight regular rows of kernels with no space at top or base, extending well over the tips and butts of ears, and, third, should shell eighty-six or more per cent of shelled corn to the cob. The kernels of dent varieties should have a modified wedge shape, a medium depth of indentation, good length in proportion to width, a good thickness, with a large germ, and should be heavy in weight. Variety characteristics are important for, without the production of uniform varieties, little real progress can be made in breeding. If no variety standards are established, the work of improvement will be scattered, poorly defined, and likely to be of little real value. All our present varieties are suffering from their lamentable lack of uniformity. The opportunity for the selection of new and improved types by reason of the natural variability of the present varieties is unbounded. The establishment of local varieties must be helpful and valuable. However, for these varieties, standards should be made, modified as the variety develops, perhaps, but furnishing a goal for united and constructive work and effort.

SEED CORN BREEDERS AND ORGANIZATIONS.

In 1899 the writer proposed the organization of a Seed Corn Breeders' Association to Mr. E. E. Chester, Champaign, Illinois; Mr. J. H. Coolidge, Galesburg, Ills.; Mr. J. H. Reid, Delavan, Ill.; and Mr. F. A. Warner, Selby, Ills. This organization was perfected and was so far as the writer knows, the first organized effort for corn breeding in this country. Since that time every important corn state has organized a similar movement. It is important from the fact that, as experience has shown, the improvement of corn has made most progress in those states where these organizations have been most active. In some cases the organizations are not taking as active steps as in others, which is to be regretted and due, no doubt, to mistakes in the plan of organization. There is no other feature which means so much to the corn industry as organized efforts looking toward the study of corn, production of better seed and the careful and legitimate distribution of this seed in regions to which it is adapted.

The organization of more associations of this character, the active work of those already organized, can do more to promote the use of good seed corn than all other means combined. These organizations could well combine in a national association, whose duty it might be to keep the pedigrees of the breeders of corn, and furnish certificates to the seed corn producers of the pedigree. The time is certainly ripe for such a movement.

The corn growers' associations, schools for corn judging, agricultural college courses of instruction in corn judging and breeding, are all helpful to the betterment of our great American crop, and should receive the active support of every corn grower.

There is a tendency, possibly on account of the comparatively long time necessary to accomplish results, for corn breeders to lose interest in their work, and to consider that which has been accomplished and known about corn sufficient and all that is necessary. I venture to assert that we are just in the preliminary stages of our knowledge of this plant and crop, and that the future holds in store for us much that we do not now even dimly foresee. The more we observe and study, work and live with the corn plant, the more undiscovered possibilities appeal to us. Let all who can and so desire, enter vigorously into the study of this wonderful and most intensely interesting crop, with open minds, receptive of new ideas.

Can any corn grower say that he may not be of service to this cause, and in helping secure more productive varieties of corn, be a benefactor to our country?

Mr. Randall: The committee on credentials requests that all those who have not handed in their credentials do so before leaving the room. I don't want to disturb you now, but kindly hand them in before leaving the room.

Professor Bull: At this time I want to announce that the meetings for this afternoon and evening are to be held at the experiment station at the live stock building. There will be an opportunity for the delegates and members of the society to get something to eat at the school dining room, so you need not worry at all about your hunger,—it will be satisfied there.

I want to announce also that tomorrow's meetings will be in this room. The business meeting of the Minnesota Field Crop Breeders' Association will be held in the class room on the upper floor of the live stock building

at the experiment station tonight at seven o'clock. We want everybody to be there whether they are members or not,—we especially want the members to-be there, but we invite everybody to be there. There are reports from committees that will be interesting, and business to be taken up that will be interesting to listen to.

Professor Dietrich of Illinois will now address you on "Modern Swine Feeding." (Applause).

MODERN SWINE FEEDING.

BY PROF. WM. DIETRICH, OF URBANA, ILL.

Professor Dietrich: Mr. Chairman, Ladies and Gentlemen: It has been said that necessity is the mother of invention, and it is a very good saying, indeed, but if that had been true in swine feeding we would have long since had better methods of swine feeding. In the past, however, swine feeding has been a profitable business and a person was not driven to the necessity of discovering better methods. In my case, it was a little different, and there were circumstances which forced me to investigate this subject with the idea of establishing new standards, and finding some means of swine feeding by which we could attain better results, and by which we could always obtain good results.

Have you ever seen one of your neighbors who is feeding swine, feed a bunch of hogs for nineteen months and have them weigh three hundred pounds? Yes, you undoubtedly have. And have you seen a man just across the line from him, feed a bunch of hogs that were equally as good at the start, with equally as good feeds, and possibly better methods,—feed them to weigh two hundred pounds at the same age? I dare say you all have, because those conditions exist everywhere. I once saw a bunch of hogs fed according to what the agricultural colleges used to tell us were good methods. You know they used to preach on protein; they used to say protein is a good thing, and the idea was since it is a good thing, go ahead and feed it, the more the better. Well, this particular bunch of hogs that I have reference to were fed like this. The pigs were farrowed in the spring; they were well fed as soon as they began to eat on a variety of feed, such as corn meal, flour middlings, ground rye, and ground peas, an excellent combination of feeds. The farmer sowed a field of Canada field peas right next to the hog lot, and next to that he planted a field of corn and in the corn he planted pumpkins. Now the idea was, the pigs being farrowed in the spring, they were well fed until the crop of peas came to maturity, and then they were turned into the pea field,—peas, you know, are rich in protein. The pigs at this time had reached a stage when they needed to produce growth, the protein; when they needed protein to produce lean meat, or muscle, or growth, and the idea was that by turning the pigs into the pea field they would get their growth, and after they got through with the peas to turn them into the corn field, and that having had their growth they would eat the corn, and be finished off for the market, and at the same time they would eat the pumpkins which would furnish variety,—would furnish the succulence. The whole thing looked very nice, and

those pigs should have made a wonderful growth, and should have made a wonderfully cheap product for the market. But alas, how did the scheme work out? When the pigs got through with the pea field, what did they do in the corn field? They went all over that corn field, and first opened up every pumpkin in the field and ate all the seeds, a remarkably strange incident which could not be accounted for at the time. I know all about it now, but did not then. What did they do next? Well, they ate the corn, and then they ate the pumpkin rinds. After they got through with the field they had to be brought in and fed a long time, and those pigs when they were nine months old,—the idea was that they should have weighed anywhere from two hundred and fifty to three hundred pounds,—it looks reasonable, doesn't it?—but those pigs actually weighed when nine months of age, after being fed that way, they weighed from a hundred and twenty to two hundred pounds. What was the reason? What was the trouble? They were well fed,—all they could eat or protein and carbohydrates; peas, pumpkins, corn, oats, rye and corn meal, but you didn't get results. What did Colburn tell us in his book on swine husbandry? He gives us an account there of a certain pig, and the facts are supported by sworn statements,—that this pig when he was five months and twenty three days old, gave a dressed weight of three hundred and twenty-three pounds. You know what that means. Pigs ordinarily dress from seventy eight to eighty two per cent, of their live weight. You figure that into live weight, and this pig at five months and twenty-three days, allowing seventy-eight per cent for dressed weight, which is low, would weigh four hundred and fourteen pounds. Four hundred and fourteen pounds, and less than six months old! It seems remarkable, but notwithstanding it shows the possibilities. It shows the possibilities, but how about these other pigs that at nine months weighed only from a hundred and twenty to two hundred pounds? It shows that something was wrong. Now the question is, where is the trouble, and what are we to do that we can get hogs every time to weigh three hundred pounds at nine months of age,—every one in the bunch? Those are the questions that are before us.

I have here chart that is compiled from the average results given by experiment stations, which shows that at six months old a hog ordinarily weighs two hundred pounds. That is a good weight. A nine months old hog weighs three hundred pounds. That also is a good weight, but those results have not been obtained by continuous feeding. They have been obtained rather by short experiments conducted for two or three months,—and then the whole thing is put together, and if you are to feed a bunch of hogs from the beginning up to the close, they will follow that same curve. You, perhaps, would not have your hogs so large.

Now, it isn't my purpose here this morning to lay down any definite rules which you are to take home and follow. I might do that, but before you go home you would forget them. The thing that I want to do is to outline for you some fundamental principles in animal nutrition. For if I can say something that will start you to thinking, and start your upper story to working, then you will work out your own salvation; because if I tell you how we feed pigs, or if you try to feed pigs the way your neighbor feeds pigs, you won't succeed. There are no two men that are made up just alike; there are no two men who work just alike, and when

one man begins to do what the other fellow does, he is going to get into trouble. Of course, he can do it is a general way, but not in a detailed way. So, I say, it is the fundamental principles that we must get hold of, and then every man must work out his own salvation. Did you ever hear that saying in the Scriptures where it was said that the fathers' sins were passed down to the third and fourth generations? Did you ever stop to think what it means? Does that refer only to spiritual things? Don't you know that that is an established rule in breeding live-stock; and in breeding swine, cattle, horses, and sheep, in all places,—everywhere? But that isn't my subject this morning, although it is true in a limited sense in swine feeding. That is a fact. Does it make any difference how the man before me fed his pigs, as to what I am going to do with them? Does it make any difference how the pigs were fed last month, as to what they will do this month? Certainly. Let me show you. We have here a chart illustrating the gains made by pigs in different lots in feeding experiments. Now this lot you will notice ran for six months. We have here, lot nine, as you notice, represented by this curve up here. Here is lot two, represented by this curve. Now there are two lots of pigs, lot two, and lot nine, that during the last three months of this feeding experiment were fed exactly the same,—on exactly the same kind of feed, and they ate about the same quantity. How much gain did they make? Lot two, during this time, gained twenty pounds in three months; lot nine gained a hundred and twenty. One lot gained twenty pounds, and the other lot gained a hundred and twenty. Fed the same feeds exactly, fed in the same way, and ate almost the same quantities, but notwithstanding one lot gained just five times as much as the other,—six times as much. What is the cause? It all depended upon the way the pigs were fed, during these previous six months they were not fed alike,—during this period (indicating on chart), but they were fed just exactly the same when these differences were brought out. Now I will show you why. We have here a little chart. That is a little sermon that I carried around with me last winter. You notice here the upper curve as I have indicated on the chart indicates the protein eaten up, the digestible protein. You notice they started out with less than two tenths, and then suddenly increased it to twenty-eight hundredths, and that was fed along for about a week or ten days, and then it was gradually reduced and that quantity fed for a time; then the quantity was again increased and fed for a while and then reduced again; then increased again for a while and then reduced again. That represents the total amount of digestible protein eaten by those pigs. This other line here (indicating on chart) represents the protein excreted. Now it is a fact which is known to scientists that if you feed an increased quantity of protein, there will be an increased quantity excreted as compared to the amount eaten. You notice also that where the amount eaten was increased suddenly up to a comparatively high quantity and then reduced, you notice that the amount excreted does not reach its maximum until about four or five weeks after it reaches the maximum,—away over here, a long time after the amount eaten had been reduced. That shows that the pig has a certain tendency, that is he establishes a habit to increase the amount excreted, and then to keep on increasing that and keep on wasting it afterward. He establishes a factor of waste. It

is just like this. Suppose that you have a young man, brought up on a farm under economical conditions, and that he is very industrious and very economical. You send him out to the city to work, and he gets, we will say, twenty-five dollars a month salary. He has got to pay his board out of that, wear common clothes, and lay up a little money,—start a bank account. How long will he be able to increase his bank account with that salary? It won't be long and he will be going into society and wearing better clothes, living in a better boarding house. He will spend it all before many weeks. Suppose you want him to increase his bank account still more, and you gave him fifty dollars. It is a lot of money and he can save up quite a little out of that for a while, but it won't be long before he will be spending all of that too. Then, suppose you still want to increase his bank account and you raise him to a hundred dollars, and he will have a surplus then to increase his bank account with. Now that is just what the pig does if you feed him a little more and a little more. He can't waste it all and he will put it in his bank account as fat. What will happen to your young man if you cut him down from a hundred to fifty dollars. He has got in the habit of living at a hundred dollar rate, and if you cut him down to fifty what is he going to do? It will take him some time to get down to the fifty dollar basis, and he is going to draw on his bank account, he is going to continue that curve of expenditure, but will come down after a while. That is the same thing that the pig does. You feed a pig wrong this month and you will get the result of it next month. If you have gone wrong once, about the best thing to do is to let your pigs go and start over with a new bunch.

Now this matter of swine feeding involves radicalism, this thing that we hear something about in politics now and then. We have the "stand-patters" as they call them, and then we have other people whom they are afraid of, like Hearst. The great cry last fall was, if Hearst should become Governor of New York, it would upset the whole machinery of the state and everybody would suffer great harm. Let them tear the whole thing down, it wouldn't all be wrong; there is no evil wind but what blows some good, and it is only by getting onto the radical side of these problems that we develop new theories, and develop latent possibilities. It is the same in other lines. One of the results of the butchers' strike in Chicago a few years ago was simply to show the packers where they could get along without the men that they had been employing right along, and to develop new possibilities, and to put the business in shape so that they could run more economically afterwards. There are always some good things result. What about drouth? Sometimes we have a great drouth in the country and have a period of hard times. Some good results from that. People learn to do things when they are driven to it. As I say, we can establish conditions of necessity, and necessity is the mother of invention; and we invent new methods and new means by which we can make more money and live happier afterwards.

Now this subject of modern swine feeding,—and we might put it in another light, but it is the cart before the horse. Did you ever think about that? Did you ever stop to think whether the cart could pull the horse or whether the horse always did pull the cart? How do you know the cart can't pull the horse? Did you ever try it? You don't know it until you

try it. There is a saying in Germany, "Why does a goose eat grass? Because the gander does." He doesn't do it because it is any good to him, but simply does it because somebody else does. That is the thing we want to get away from,—simply doing things because others do it. We want to stop and think about these problems, and study and try to invent methods and means by which we can do better than anybody else has done before. Now in reference to this question of the cart being before the horse,—what do the cattle feeders do? When they want to get their stock ready for market they give them some oil meal at the close of the feeding period, that is they feed protein at the close of the feeding period. Did you ever stop to think that protein might be fed at the beginning of the feeding period? What does protein do? Protein builds up the lean meat and makes the animal grow. Do you want to make an animal grow just before he goes to market? The market demands a fat animal, and fat is made by carbohydrates. Then why not feed protein first when the animal is growing, and feed carbohydrates at the close, and the animal is putting on fat? It would be more logical. Protein costs a good deal more money than carbohydrates, and if you feed it when you don't need it, it makes the production expenses much larger. A pound gained in live weight on beef cattle costs anywhere from six to eight cents, but that is out of our field.

Then there is the question of the amount of protein I told you at the beginning of the pigs that were turned out in the pea field, and ate a large quantity of protein and yet made a small gain. What was the trouble? Didn't they get enough? They had plenty of it, probably too much. There is a limit to all things; there is a limit to lots of good things, and it is reached much sooner than the limit to things that are not so good.

A Member. Just pardon me, right here. Do you think it is a bad plan to turn pigs into a field of peas that are ripe?

The Speaker. I certainly do, if they are turned in to eat all they will. Did you ever notice that years ago when immigrants were coming to this country,—I will speak particularly of the Germans, because I am of German descent—my father and mother both came from Germany—and it may be with other nations, and I think it is, that all foreign born people in this country tell you that the people over in the old country are great, strong, robust, healthy people, and the American people as compared with them are puny and weak, and not nearly such a strong, robust class of people. Now, what is the difference between the diet of these two countries? The people in the United States eat lots of beef. The people in Germany, so my father tells me, used to eat meat but twice a week, and that was a piece of fat pork. The people of this country eat more lean meat, and the people in the old country eat less protein. So there we have conditions parallel to those of the pigs that I mentioned that weighed from a hundred and twenty to two hundred pounds. They were fed an abundance of protein, and they got too much. So I say there is a limit.

A Member. Will you tell us how to handle pigs from the time they are ready to go to the block?

The Speaker. I will get to that in a few minutes. If you had a pig to which you were feeding four pounds of corn a day that pig will make you a quarter of a pound gain in live weight per day. You feed that pig four pounds and he gains a quarter of a pound each day. Now if you were going to make that pig gain a half a pound what would you do? Well, you

would tell me that instead of four pounds you would give him eight pounds,—you would give him twice as much feed. Well now, if I told you that my pig was gaining a quarter of a pound a day on four pounds of feed, and that I wanted to make him gain a half a pound, and I took away half of that feed and gave him only two pounds, you would probably think I was a fit subject for an asylum. That is the cart before the horse again. You never tried it. You don't know what it will do. Well, I have tried it. Here we have it. I won't have time to explain this whole chart. You can see what it is for yourselves. At any rate it is the average results of four pigs. Right here you will notice that these pigs were fed eight-tenths of a pound of meal per day; eight-tenths of a pound of meal and two and four-tenths pounds skim milk, and they were fed that for five days. This column, (indicating chart), gives the weight, at this point for the first part of that period. At the beginning they weighed forty-six and a-half pounds, and the last day of this five day period they weighed forty-six and three-quarter pounds, that is, those pigs in five days gained a quarter of a pound. They had eight-tenths of a pound of meal per day, and two and four-tenths pounds of skim milk. That is such a small gain that it can practically be eliminated. That might be called the maintenance ration. That is what I tried to establish, and that is what a maintenance ration is. Well, I continued the process of reduction in feed,—perhaps you can't all see it down below here,—now here you will notice it got down to four-tenths of a pound,—four-tenths of a pound of meal, and one and two-tenths pounds of skim milk, just half of the quantity. That was fed four days. The first day they weighed forty-nine and a-quarter pounds, and on the fourth day they weighed forty-nine and three-quarter pounds. They gained a half a pound in four days on just half of the feed that it required previously to gain a quarter of a pound. I took away half of the feed and they gained twice as much. It is an absolute fact. Well, that of course, is not a practical feeding problem. In approaching the maintenance ration you get different theories to illustrate a principle. It is the principle that we are after. I told you about this factor of waste that was established. Well, that is this very thing. These pigs had been on full feed and they simply established that high rate of waste over and above maintenance, and that, of course, takes a good share of the feed which they eat every day. By this process of reduction towards maintenance, don't you see, the pig gradually got in the habit of living on less, the same as your young man, if you reduced him from a hundred dollars to twenty-five dollars, would get in the habit again after a while of living on twenty-five. It took these pigs about four or five weeks to get over that habit, and when they did get over that habit of waste,—that large quantity, they were able to live on less, and they were able actually to make a great gain in live weight on four-tenths of a pound of feed,—actually to make more gain on four pounds of feed than they were on eight pounds. I say it illustrates this principle of the factor of waste.

A Member. How long could you continue that way?

The Speaker. Just until we had this fact established, about a month. We have the same thing illustrated here in some figures that were worked out away back in 1858. You will find this table given in Armstrong's Text on Animal Nutrition. It gives the lean meat fed to a dog, and here the gain and loss in flesh. You will notice he starts from zero and goes on up

the scale with him. On 1,100 grammes of meat per day the dog had established a nitrogen equilibrium. During this first part he lost, and here (indicating on chart) he gained a little. And 1,100 grammes was just about a sufficient amount of nitrogen to maintain an equilibrium. Now down here where he started out with 1,800 grammes what happened? You will notice that when he fed him 1,500 grammes he then lost 10 grammes. It shows that under these conditions where he started high and went down, the dog required about 1,600 grammes for maintenance, while here where he started low and went up, he was maintained on 1,100 grammes. It shows that there is nothing gained by reason of that factor of waste established by feeding too large quantities.

Now to come back to this question that was asked a little while ago, about the best method of handling pigs from the time they are dropped until they go to market. We are working on this very problem, as to establishing new standards, the best methods of feeding just the right quantity, and just how it should be fed, and so on.

This is an experiment here (indicating on chart) worked out two years ago, the first one of the series. We are now working on the fourth. You notice that these pigs were put under experiment when three months old, and were fed up to nine months. They were fed with their dams up to three months,—they were not weaned up to this time. When the experiment started the pigs weighed fifty-one pounds,—a little bit over fifty. These different curves represent the different lots. Lot one you will notice the curve runs along here,—the pigs weighed seventy-three pounds at the close of this test,—pigs nine months old weighed seventy-three pounds. The pigs in lot two weighed one hundred and twenty-one pounds. The pigs in lot three weighed two hundred and forty pounds. The pigs in lot five and six weighed two hundred and seventy pounds. The pigs in lot eight weighed two hundred and ninety-nine pounds. The pigs in lot nine weighed three hundred pounds. There is a difference between seventy-three pounds total weight, and three hundred pounds. The pigs in lot one gained but twenty pounds, while the pigs in lot nine gained two hundred pounds, and it was all brought about by a difference in feeding during this six months. Well now, you want to know how they were fed. The pigs in lot one were fed that good old stand-by cornmeal,—not necessarily cornmeal, but corn. We fed them cornmeal, but people in the corn belt very often feed corn,—corn today, corn tomorrow, corn next week, corn next month, and corn all the time. And here we have the results. The pigs were fed twice a day and they were given all they would eat, and eat perfectly.

The pigs in lot two were fed in addition to cornmeal, a charcoal mixture. I don't know whether I want to touch upon this subject or not. I notice the International Stock Food people have got a large building over here, but perhaps they are not present. These pigs had a mixture of charcoal and wood-ashes, and a little lime and salt in addition to the cornmeal. You notice where they had this addition of the charcoal mixture they gained seventy pounds. They made three and a-half times as much gain by adding that. When the agent of the International Stock Food Company, comes around and tells you to buy it he will tell you that your neighbor makes a good profit by using it. I don't say that you can't, you probably can, but what is the use, in giving him half your profit, if you get the same results

with materials that don't cost you anything. Let the other fellow look out for himself, you make all the money you can for yourself.

Well, the pigs in lot three,—you hear a good deal about clover now and then,—the pigs in lot three had only clover in addition to corn and charcoal. Still they weighed two hundred and forty pounds, where these pigs weighed only a hundred and twenty pounds. Their gain was about three times as much by simply the addition of clover, and even the clover was only added during the first half of the experiment. The experiment didn't start until the 13th of August, and the clover was all gone before the conclusion of the experiment. The pigs in lot five and six were fed according to a feeding standard. They were fed cornmeal, bran middlings and tankage. These were mixed up so that they had four at the beginning and seven at the close. They were given those feeds the same as the rest of them and they weighed two hundred and seventy pounds.

Well, the pigs in lots eight and nine were fed according to ideas that were conceived down there in Illinois,—the new method, as we called it. We were trying to establish a new standard and that was our first result. Our pigs weighed over three hundred pounds, while those fed by the ordinary feeding standard weighed only two hundred and twenty. That is, the pigs in lots eight and nine up to this point had made twenty-eight and six-tenths per cent more gain, than the pigs in lots five and six. Well, you ask, perhaps, how much more feed they ate. They made twenty-eight and six-tenths more gain, and they actually ate five and four-tenths per cent less feed. They made a larger gain on a smaller quantity of feed. How was it done? Simply by controlling that factor of waste that I have been telling you about, that is all there is to it,—controlling that factor of waste. With the feed standard as it is ordinarily used with a nutritive ration of one to four, the pigs given all they will eat, they eat too much. All we did in lots eight and nine, we gave them less. We didn't give them all they would eat, and at the beginning we gave them a little bit less. And then as they grew older and needed more, and established this factor of waste, as the young man does, we kept giving a little more, so that they could keep on increasing their bank account, and by the time we got to this point they had all they could eat. We kept crowding them along and increasing the quantity gradually.

A Member. All they could eat of what?

The Speaker. Cornmeal, bran, middlings, and tankage.

A Member. What is tankage?

The Speaker. A packing-house by-product rich in protein.

By starting lower and then giving them a steady increase, why we got this large gain, and not only that, but when we got up to this point,—about six months in lot nine, and seven months in lot eight,—I told you that carbohydrates make fat,—we simply took away the protein. We fed them protein only during the first part, and at the close fed them carbohydrates and put on fat and got those pigs in good market condition in that way. We got larger gains and we got cheap gains because we fed them cheap feed at the close, which is corn.

Lot nine at this time, during the last three months, made a hundred and twenty pounds, where lot two made only twenty pounds, and they were fed exactly the same, on cornmeal and the charcoal mixture. The difference was made by the nitrogen fed during the first three months.

A Member. Were these pigs in exactly the same condition at the start?

The Speaker. Yes.

A Member: How many in each pen?

The Speaker: Nine pigs in each lot. These pigs were all fed in a dry yard, with the exception of lot three that had a small clover pasture.

A Member: Were the systems just the same?

The Speaker: Yes, those pigs were bred just the same, were fed just the same, and fed at the same time by the same man.

A Member: Did they have the same exercise room?

The Speaker: They had a lot of about one-sixth or one-eighth of an acre. Simply a good sized lot where they could take plenty of exercise, and always had fresh water before them. They were well taken care of and had a dry place to sleep.

This was our first trial. I told you that modern swine feeding involved radicalism. If we are going to establish new standards and new principles we have got to launch out in a new way in the dark. Everything we get isn't going to be good. Now, during the past summer we thoroughly experimented on this series (indicating on chart) and our pigs didn't weigh as much as these. We were working there under slightly different conditions with the idea of getting better results, and the fact was we got poorer results. There were some unknown principles at work that we didn't know of at the time, but we have learned since what they were. Now after this was finished,—I told you that these pigs had five and four-tenths per cent less feed than they did in lot five and six. Our idea was then that if we could make them eat more feed they would make more gain. Every body would concede that. If your pig makes a pound gain on four pounds of feed, if you make him eat six, he ought to make more gain. We succeeded the next year in making the pigs eat about fourteen per cent more. They made a little larger gain but not in proportion to the feed they ate; and the gains were more expensive. There were some principles at work there that we didn't have control of. The next experiment was to introduce a maintenance ration. After they had established this high rate of waste to introduce a maintenance ration and eliminate it, that was the idea. It did give a little better results, but not large enough. We have learned since what was the trouble, but it takes a long time to eliminate this factor of waste. The maximum of the protein excreted is not reached until a long time after the maximum is reached in the amount eaten. Then we tried another thing, we tried stall feeding. In feeding pigs in a drove some of them will eat slow and some of them will eat fast and perhaps eat too much, and others eat too little, so our idea was to put each pig in a pen by himself and feed him separately and give him just the exact quantity. Well that gave better results, a little better, but still there was another factor at work there that we did not have control of. The next thing was that of feeding three or four times a day. The pigs in lots one, two, three, and four were fed twice a day. Lots six, seven and eight were fed three times a day. The feeding of lot six was exactly as lot four, except as to the number of times, but they made no better gains. They ate more feed and made the same gains, but their gains cost more. Therefore, we concluded from this that feeding three times a day has no advantage.

A Member: Do you think there should be any difference made in the number of times that you feed pigs, say they are about six weeks old up to eight weeks, at the time of weaning? When you don't fatten them would

you make any difference in the number of time you would feed them per day?

The Speaker: I think I would. As I said a moment ago, lots five and six were put on full feed, and we fed one lot twice a day, and one lot three times, and they made no larger gains by feeding them three times. These other lots were also incidentally fed three times, so we concluded that feeding three times a day was no advantage.

But after running down these other clues we found some missing factor we had not control of, and our experiment this year was planned with that in view, to find out what effect feeding three times a day has. And at the close of the first eleven weeks of the present experiment the pigs that were fed three times per day had made seventeen and seven-tenths more gain in live weight than those that were fed twice a day. I tell you this confidentially this is only the beginning of the experiment, but the indications are that we get nearly eighteen per cent larger gain where the pigs were fed three times a day on the same quantity of feed. Feeding four times has no advantage over feeding three times. There is still another factor that is left untouched and that is a factor that we hope to work out in the next experiment which will begin the first of April.

I think a young pig should be fed oftener than a mature hog. The idea is in feeding oftener and in limiting the quantity the curve of protein waste does not run up so high, and after they have come to maturity they use less protein.

A Member: Don't you think there is a difference in digestive capacity? When they are young they have greater digestive capacity than when they get older, and they digest their feed more quickly, do they not, and therefore they have to get it oftener, isn't that the reason as well?

The Speaker: Yes, I think that is one of the factors, though when pigs are young they can eat and digest too much, they can eat and digest more than they can handle.

I think this whole problem of modern swine feeding as I have been trying to outline it is like a case of murder. I saw an account in the paper yesterday of a case. Just one fact was known—somebody was killed, but it was not known by whom. Well, in such a case the clues are examined, here is a clue, there is one, and there is still another clue. You get your detectives after them, and you run down this clue and don't catch anybody; and you run down the next clue and you don't catch anybody; you take the third one and still don't catch anybody, and you take another clue and perhaps finally land the murderer. This problem of swine feeding is just the same. We got a large result and we tried to find out why. We had an idea at one time and ran that down, and we hope to land our murderer by next fall.

I thank you.

Professor Bull: There is an important announcement to make. It seems that some of the audience have misunderstood my statement in regard to something to eat at the Experiment Station. If you expect to get any dinner you better get it here in Minneapolis, but for the delegates and members of the society, tonight's supper will be taken care of there.

Now just as long as the audience is willing I think the speakers are willing to answer your questions. Before this, however, Mr. Cosgrove has an announcement to make.

President Cosgrove: It becomes my sad duty to announce that since the opening of this meeting we have received word of the death of our late president, the Hon. John Cooper, at Riverside, California. I wish at this time to appoint a committee to prepare suitable resolutions to be presented at this meeting tomorrow. I will appoint on that committee Hon. Frank W. Randall, William Lee, and J. W. Morley, of Owatonna. This committee will also include suitable resolutions covering the death of one of our lifelong members, a man who never failed to be at our meetings, the Hon. H. W. Stone, of Morris, whose death occurred some few weeks since.

AFTERNOON SESSION.

JAN. 9th, 1907, 2 O'CLOCK.

Under the Auspices of the Minnesota Live Stock Breeders' Association.
Live Stock Pavilion—University Farm.

Thos. H. Canfield, Presiding.

Mr. Canfield: You will please come to order. This meeting is under the auspices of the Minnesota Live Stock Breeders' Association. We are very much gratified to see so many of you here this afternoon. The first speaker on the program is Prof. H. W. Mumford of Urbana, Illinois, who will speak to you on the subject, "What the Cattle Market Demands and How to Meet it." I take pleasure in introducing to you Mr. H. W. Mumford.

WHAT THE CATTLE MARKET DEMANDS AND HOW TO MEET IT.

BY PROF. H. W. MUMFORD, URBANA, ILL.

Ladies and Gentlemen: I am sure I feel highly honored to be asked to speak to the live stock breeders of the great state of Minnesota. I am not a native Illinois man, and hence I am not a "sucker," but I have become very familiar with the phrase, "The great state of Illinois," so I think it is perfectly safe to say, "The great state of Minnesota."

There is a popular belief that the cattle market calls only for the best grades of fat cattle. This is true only in the sense that it cries loudest for the best grade of cattle. It is a mistaken conception, however, to think that there is not a market and not a good market for other grades of cattle than the best grade. I find that every one of the great cattle markets of this country are organized to handle profitably every grade of cattle that is likely to be forwarded to it.

If the market is organized to handle profitably all grades of cattle, then we must, in discussing this question, take into account that fact. If it is a fact, then there is a market for every grade of cattle from canner cows to the prime steers. Now, if it is a fact, as we believe it is, that there is a market for every grade of cattle that is forwarded to it, then you may well

ask why all this agitation over the well bred steer, the prime steer? Why, on the one hand, do agricultural college and experiment station workers insist, or at least recommend and urge the beef producers of this country to produce the well bred, well finished bullock? On the other hand, why do the packers urge this upon the beef producers of the country?

First, to take up the cattle feeder's interests in the prime steer, or in the well bred steer we will say—we must be fair enough to assume, I am sure, that the experiment station worker and the agricultural college professor is interested, first, last and all the time in the beef producer's interest, providing of course that we are talking about fine cattle, and that is what we are talking about, and we must assume that the agricultural college and experiment station workers have no other interests than that of the beef producer when they are talking the well bred steer to us. Now why does the agricultural college worker believe that the well bred steer is the best for the beef producer, and why is he the best? In the first instance, it is only fair to say of the scrub—not the scrub man, but the scrub steer,—it is only fair to say of the scrub, that the well bred steer has a greater advantage to the breeder than to the cattle feeder. Now I wish to illustrate that point. I want to be perfectly fair to the scrub: I want to "give the devil his due." (Laughter).

Now in Illinois the station went to the Chicago market, the leading cattle market, to determine the grades of cattle, both finished and feeding cattle, and classify, or at least to put down in logical order, the different grades of cattle that are on sale in the Chicago market practically every day in the year, or at least on the leading market days. We found, for example, that the best grade of fat cattle is the prime steer; the next best grade is the choice steer; the next is good; the next is medium; the next is common, then common rough. Now those are the fat cattle. Unfortunately fat cattle do not grow on bushes and spring up in the night—we would be glad if they did, but they do not. We have to have something to begin with to make this kind of cattle, and so we have here the fancy selected, the choice, the good, the medium, the common and the inferior grades of feeding cattle. Now you may ask, why do we have one more grade of feeding cattle than we do of fat cattle? That is very easily explained. Any cattle man who knows anything at all,—and they are the most intelligent class of men on earth, knows that fat covers a multitude of defects. In other words, as you fatten a thin steer his imperfections are lost sight of to a greater or less extent. You might carry that a step further and say that after the pelt is off the fat bullock, you can see less difference than than while the steer is alive. That is to say, there are fewer grades of beef than of fat cattle, which would go to show that some of the steers that look so well on the outside, don't look so well on the inside. The carcasses are not so good as they seem to be when they are on foot.

Now we started out to try to explain to you the reason why the well bred steer is a greater advantage for the cattle breeder than to the cattle feeder. I understand primarily Minnesota farmers are interested in cattle breeding more than they are in simple cattle finishing or fattening. In the state of Illinois we have practically gone out of the cattle breeding business. There are very few beef cattle bred in the state of Illinois, and for obvious reasons, but in your state it is different. You are producers rather than finishers of cattle. You are both producers and finishers of cattle.

The first step in illustrating the point I wish to make is to call your attention to the values of these cattle and to some of their characteristics,—these feeding cattle, because in the first place you have to have the feeding steer before you have the fat steer—now what are the values of these cattle ordinarily on the Chicago market?

Well you might say, in the first place, except at the International, we do not have any fancy selected feeders on the Chicago market.

Such cattle are produced by breeders who are past-masters at the business, the people in your own state, or on the ranges,—the best class of range cattle. About the best grade of feeding cattle on the Chicago market is the "choice" grade, and they are very scarce on the Chicago market. Ordinarily the fancy selected grade of cattle cannot be purchased on the Chicago market or any other market for less than \$4.50 a hundred weight delivered in the feed lot, and it is very seldom you can get them for that.

I will just run over this hastily, and give you the approximate values of these other grades: \$4.15 for the choice; \$3.80 for the good; \$3.45 for the medium; \$3.10 for the common, and \$2.75 for the inferior.

Now an explanation should be made there. You say you can go to the Chicago market and buy feeding cattle much cheaper than that. To be sure you can, but you can hardly buy anything that weighs a thousand pounds on the Chicago market for less than \$2.75 per hundred weight. The kind you can buy for \$1.75 or \$2 or \$2.25 per hundred weight is the kind that weighs anywhere from five hundred to eight hundred pounds. And we do not consider that weight of cattle comes into the feeding grade,—but belong rather to the stocker class. We call these stockers, and we are talking of feeders. I want to bring out this point. I wish to illustrate all of these various grades say approximately a thousand pounds each. You will note that they are worth these various sums per hundred weight. If they weigh a thousand pounds each, all you have to do to get the value of one steer belonging to each of these grades, is just to put the decimal point over there (indicating) and add a cypher, starting in at \$45 and ending at \$27.50. It don't take a man very good at figures, who is breeding cattle, to see which animal he should breed, the \$45 one or the \$27.50 one. And that is not all. This steer here (indicating) is approximately two years old. There is no need of his being over two years old, and if he belongs to the fancy selected grade, he should weigh a thousand pounds at two years old, or before he reaches that age. The choice grade will be approximately two and one half years old, and from that down. This one will be upward of two and a half years old; this one three years old; this one three and a half, and this one, the inferior, four years old.

These figures are the result of very careful study of the different grades. You take an inferior feeding steer that weighs a thousand pounds, and he will be four years old. Here is one right here: that steer weighed a little over a thousand pounds, and he was over four years old. He is the kind we call an inferior feeding steer.

Now it has taken four years in the one case to produce a thousand pound inferior feeding steer that is worth on the market twenty-seven dollars and a half. Divide that by four and you find what that steer has paid you each year of his life for his keep.

Now going to the other extreme, in order to make the point striking, we take the fancy selected steer from here. Some people know I am a Shorthorn man, and I suppose that accounts for this fancy selected steer

being a Shorthorn, but I have to blush sometimes for some of the Short-horn steers I see. (Laughter). And it would be better if they were black, or white-faced or something else, some of them. So don't think that I don't know any better than to know that there are some other breeds that have fancy selected grades than the Shorthorns. I had to hunt a long time to find this one, but I found him. That steer was less than two years old. He did not weigh a thousand pounds, but he was worth \$45 on the market.

To repeat and make the point strong, because it is important to the man who produces his feeding cattle; he would better be producing the kind that takes but two years to make them worth forty-five dollars, if he is breeding feeding cattle and not finishing, than to raise the steer that would take four years to produce, and is worth only \$27.50.

Of course I appreciate that there is a difference perhaps in the expense of breeding and the way they are raised, but I do say, and I believe without fear of successful contradiction, that it will not pay any man under any circumstances, to raise an inferior feeding steer to four years old and have him worth but \$27.50, I care not how he is raised.

Now that is the breeder's side of it. The breeder cannot afford to raise any other kind but the best that his intelligent judgment,—and he must see that it is intelligent,—can produce.

The cattle feeder, on the other hand, has a different proposition on his hands. It is possible, in other words, for the cattle feeder, the man who simply buys the feeding steer that somebody else has produced, at a loss mind you,—he can buy this steer (indicating,) or this one or some of these others,—the common grades,—if he can buy them at a common price,—if he can steal them,—he may be able to finish them and make some money on them. The fact of the business is that there are two great classes of cattle feeders in the corn belt. I sometimes classify them that way for want of a better way—one class will handle nothing but the well bred, choice or fancy selected feeders, and they make money, some of them by dint of the most intelligent care; while on the other hand, the other class handle only the common kind, only these kinds down here. (Indicating.) And they make money. But they both are masters of the business: The man who handles this kind, buys them cheap, and as they express it in the corn belt,—they steal them, and they do pretty nearly. They take what the other fellow leaves, and they buy them at their own price.

I wish I had time, perhaps I might elaborate a little on that, but we will pass along. So you see, there is a difference between the cattle feeder and the cattle breeder as to the kind of cattle he may handle profitably. Now the well bred steer has the advantage of the common or inferior feeding steer in that he has greater capacity for food consumption. Now I want to emphasize that point,—that the well bred steer has greater capacity for food consumption than the common or inferior steer. I do not know whether that is true in all particulars of life or not, but I believe it is. I believe the better surroundings, the better environment we have, the more their capacity is increased for feed consumption. Unfortunately it is not true in the human family that the more they consume the better use they make of it, but pretty generally that is true with cattle. For example, to take a specific case, the fancy selected steer will not only consume a greater amount of feed according to his weight, but he will make equally as good use of that feed as will the inferior or common steer.

Now I suppose as a general proposition, you say he ought to do better than that; he ought to make better use of his feed, he ought to make more gain for a given amount of feed than the inferior steer, but as yet I don't think that point has been well established. Another point has been well established, and that is this, that the well bred steer consumes more, he makes equally as good use of his feed, and consequently he makes more rapid gains, and the nature of his gains, the quality of his gains, is superior to the common or inferior steer. In other words, the well bred steer puts his gains on where it is more valuable than does the inferior steer.

I will call your attention just for a moment to this lower line of fat cattle. You will notice this steer down here has fattened and just put his flesh and fat where it is most valuable,—on the high priced cuts; while some of these of the lower grade, this common rough steer, for instance, has put his fat mainly on the inside, where it is cheap. It is fat. It is not flesh; it is not loin, not prime rib, but the cheaper cuts.

The packer is interested in the production of better cattle among others, for three reasons. I will not give them all, but among other reasons, these three; in the first place, because the supply is limited; that is, the kind of cattle that the market calls for loudest is the prime steer, the best grade of fat cattle, like this one down here (Illustrating), and that is perhaps a Polled Angus, Hereford or Galloway. That is the first reason. The second reason is because they honestly believe, as we do, that as a general proposition the well bred steer pays the producer better than the common steer. Now you may think that the packer don't care whether the cattle feeder or the cattle breeder makes money or not. I say the packer does care, and that the packer wants to see the cattle breeders and the cattle feeders make money. Some money, how much money is another question which I will not attempt to figure out, but they want the cattle feeder and the cattle breeder to make some money. Now why? For the very obvious reason that they want the cattle breeder and the cattle feeder to continue in the business. But they must have a reasonable profit in the cattle rearing and cattle breeding business or they will go out of the business. Cattle feeders are not so dumb and so dull as they are sometimes given credit for. They will continue in the business temporarily when it is unprofitable, but as a policy they will not continue in an unprofitable enterprise, and consequently the packer wants to improve the cattle of the country, because he believes they are more profitable to the cattle feeder and the cattle breeder and he wants the cattle feeder and the cattle breeder to continue in the business, because, other things being equal, the larger business the larger his profits. He has large amounts of money invested in packing houses and in men and material equipment: He must keep those plants busy or he will lose money.

I had a third reason why, which I will have to refer to my notes to remember. He is interested in the third place, because he wants to see the general tone of the cattle of the country raised; he wants to see their grade raised. Now it is a surprising thing, a fact that would hardly be believed until a close study is made of the receipts of cattle on the Chicago market, but it is a very noticeable fact that out of a run of 30,000 cattle on the Chicago market, as will occur on any of their large market days,—that not over 4,000 or 5,000 of that 30,000 head of cattle are of the choice grade; that is a very high percentage. The bulk of the cattle are these lower grades.

Now the packer is interested in having the general stock of the country raised, the grade of it, he wants it better bred, because, other things being equal, the packer makes more out of the well bred than the common steer. Other things being equal, including price; now mark, that other things being equal, including price, the packer makes more money on the well bred steer, because he is more valuable to him, than he does on the commoner grades. That may seem a very simple statement, but I can make another statement which sounds contradictory to that, but it is not. It is a fact that the packers, as a general proposition, make more money on the common grades of cattle than on the prime steers or perhaps choice steers,—from here down (indicating) than they do from there up. Now I don't want to be misunderstood, but I believe any fair minded packer, who would express himself at all on the subject would thoroughly agree with that statement, that they do not make their money on these high priced cattle that they pay a premium for, but they make it on these other cattle that look pretty nearly as good as the ones that have that superior finish and superior trim, so we must not think the packer is interested in the best cattle because he makes the most money out of that kind; he makes the most money out of them providing he can buy them at the price that he wants them; when he don't do that, he cannot make more money out of them.

Now over and beyond the demand which may prevail in a general way for cattle, there are same specific demands of the market which should be considered, and if you will pardon me, I will read that part of my paper.

The discussion thus far has been of a more or less general nature. It has been concerned with the general situation in beef production. There are, however, certain specific demands of the market with which the beef producer should be familiar in order to insure him against unnecessary losses.

We will not attempt to enlighten the cattle feeder as to where he may look for a good market or a "slump."

Now I assume that you are familiar enough with the cattle situation to know that if I should enlighten the cattle feeders of this country as to the time to ship their cattle to get the highest price, and how to avoid getting the cattle on the market on a "slump," I would not be aiding agriculture.

The writer recognizes the fact that the best time to market cattle is when the highest market price may be secured, but the practical finisher of cattle understands that one cannot engage in the cattle feeding business and expect to strike a good market every time his stock is ready for the market. There are some general considerations, however, which should be fully understood. The knowledge of these facts and the formulation of cattle feeding practice accordingly will save a large amount of needless loss.

Now, first as to the **demand for prime cattle**. "There is usually a good demand every month in the year for both light and heavy weight strictly prime cattle for the high-class beef trade of the country; that is, such as is used by the wealthier families and high grade hotels and restaurants. Because of its use, there is not an unlimited demand for such beef, and, if prime cattle, from which this grade of beef is cut, are offered in excess of requirements, prices seek a lower level."

Packers are not going to buy any more of that kind of beef than their market calls for, and as I have stated, it is only the wealthier classes that can afford to buy the grade of beef that is cut from that class of cattle, and

only the best hotels in the country handle that kind. I suppose all the markets, particularly in this country, are filled with that kind of beef.

"Prices for such cattle on the hoof are regulated from month to month, according to the supply."

I want to call your attention to one particular when I read that; that there is a uniform market for this class of cattle throughout the year. You can find a market for them almost any day in the year, while with the other grades that it not true.

"During the Christmas season such cattle are required in large numbers."

If I was going to breed that kind and finish that kind, I believe I would try to make them good enough for the Christmas market; because if you make them good enough and fancy enough for that market, you can get a better price for them at that time usually than you can at any other time.

"From November 23rd to December 15th buyers for local slaughter, shipment and export, are on the market until their orders are filled. Exporters who buy for the foreign holiday trade usually buy most of their cattle from November 25th to 27th, although these dates may vary a little one way or the other, depending upon the days the export boats sail for foreign ports. Ordinarily exporters take from one-quarter to one-third of the total supply of Christmas cattle both dead and alive for export. The larger proportion of the holiday beef is exported alive, and for this purpose cattle possessing fancy quality and thick fat, weighing from 1,300 to 1,500 pounds are wanted. From 1,300 to 1,400 pounds is a popular weight, although they use some prime 1,100 to 1,200 pound cattle for that trade, and a few weighing as much as 1,600 pounds."

You know the former market was altogether for heavier cattle,—1,600 pounds for export. That is not true now. There are a few of that kind, but the demand is mostly for 1,300 to 1,400 pound cattle.

"For the New York and Eastern holiday trade, the first ten days of December, mostly from the 5th to the 8th, is considered a good time to market."

Not to ship to New York or Boston, but to ship to Chicago. The buyers buy them about that time, from the 5th to the 8th.

"For the Chicago city trade and near-by cities and towns, from December 10th to 15th; New York, Boston and some other eastern cities use more heavy or good weight cattle than the western cities. They also use a good proportion of yearlings and light weights, and the light and medium weight prime cattle seem to be getting more popular each year."

Now a word as to the demand for baby beef. There is not much preference as to the most favorable season for marketing this class of beef.

DEMAND FOR BABY BEEF.

"Outside of the Christmas market, during which there is the demand for baby beef indicated, there is not much preference as to the most favorable season for marketing such cattle. There is a good demand the year around, and prices depend upon the supply from month to month. If there is any preference it would be during the hot weather months. From 800 to 1,000 pounds is a popular weight for yearlings and 1,100 to 1,300 pounds for two-year-olds. Some buyers prefer a weight of from 1,000 to 1,100 pounds, and

then again there is a good demand for 600 to 800 pound steers and heifers. There are not as many two-year-olds used as yearlings. There is no discrimination against 600 to 700 pound baby beeves if prime."

Now I would like to under-line every word in the next sentence:

"It cannot be too strongly emphasized, however, that baby beef to sell high must be prime in quality and finish."

There is just about one man in a hundred that attempts to produce baby beef that does produce baby beef. His cattle either lack quality or finish, and they are just about as apt to lack one as the other, although they are more apt to lack finish.

"Hundreds of young cattle are annually shipped to the market that bring prices which disappoint the feeder, and most frequently because he has not made them fat enough. Taking the year around, the prices for baby beeves of quality and finish will average well with those of older and heavier cattle of the same quality and condition."

Now the question is often asked, if I produce baby beeves that way as yearlings, weighing a thousand pounds, having them prime in quality and condition, can I get as much for those as for older cattle of the same quality and finish? I would say, ordinarily yes; ordinarily the market would pay as much, but that is not usually true, because they lack that prime quality or finish,—as I say, more likely the finish. I don't want to go into the fattening question at all, unless there are some questions in regard to it, but I will say that if you are going to try to produce baby beef, you have got to start the day the calf is born, and keep it right up until he is finished for the market. You don't want ever to let that calf bawl for feed: perhaps it would be a little better to say "never let the calf cry for feed."

"DEMAND FOR EXPORT CATTLE OTHER THAN AT CHRISTMAS."

"The most profitable time generally for feeders to market export cattle at the western markets (barring Christmas time for that grade of export cattle) is winter, spring, and early summer months. The reasons are that during the late summer and fall months Canada usually markets a good many grass cattle; also they use more or less of the Northwestern range cattle for export trade, both dead and alive. Of course the extent of this latter depends upon the condition or fat of the range cattle. As to the activity of the demand during the different months of seasons of the year, that depends to a considerable extent upon the foreign market and their supply of cattle. Some years Canada has a heavy supply of exports; then again it is moderate. The dressed beef trade of the Argentine is increasing materially, and this is all having its effect upon the demand for export cattle from this country."

Demand for common cattle.—Now these kind I hope you do not produce, or if you do, that you will get rid of them in order to get better ones.

DEMAND FOR COMMON CATTLE.

"Such cattle are usually best marketed from March first to June first. They could not, however, be said to be "out of season" any time from January first to July first. After July first they come in competition with the cheap western range cattle."

"Thus it will be seen that the demands of the market vary with the supply of cattle and with the seasons of the year. The first essential, then, for the producer is to become familiar with the periodical demands of the market, and so plan his cattle breeding and feeding operations that he will be able to meet these demands."

You may ask any questions that occur to you while we are waiting for these cattle.

Prof. Shaw: Professor Mumford, if I understood you rightly, you said that the well bred steer would make as many pounds of gain from the food as the scrub. Do you think he will make more? I know you said it hadn't been established, but may we have your personal opinion in regard to that?

Prof. Mumford: Our dean says the experiment station worker should never have an opinion; if he don't know the facts, he better not attempt to state them, but I don't always agree with him on that point. I believe it is possible that an experiment station man may have an opinion.

Prof. Shaw: I hope, sir, you never may agree with him on that point.

The show cattle were brought in at this time.

Prof. Mumford: Professor Shaw asks the question, whether I believe a well bred steer will make more pounds of gain from a given amount of feed than a steer of more common grade, a commoner bred steer. In my talk before you this afternoon I said that investigation so far had not proved that he would.

Member: Investigation by whom?

Prof. Mumford: By experiment stations.

Prof. Shaw: But Professor, just your personal opinion we are asking for, if you will oblige us with it.

Prof. Mumford: Professor Shaw is bound to be persistent.

Prof. Shaw: I may be so in putting that question, for I have no doubt in my own mind in regard to it. I know, as Professor Mumford has stated, that it has not been conclusively proved by experiments, but I believe the day is coming when it will be proved by experiment, and I am so confident that I am right, that in my article on feeding which is now in the press. I have taken that stand, and let the man who does not believe it, show me that I am wrong. (Applause and laughter.)

Prof. Mumford: I suppose, as a general proposition, we assume that a thing is not proven until it is proved; but to answer that question in a somewhat indirect manner, Professor Shaw, I would answer it in this way: that we have found—I mean the experiment station workers, not your humble servant, but more able workers—that there is a vast difference in dairy cattle as to the use they make of the food they consume; some cows will produce perhaps double the dairy product than others will on the same amount of feed. Now it is undoubtedly true that there are differences in the producing capacities of beef cattle: that some steers will make their gains cheaper than others. That must be true. We assume that that is true. I think it is safe to assume that it is true. Some of us are doing some work along that line now that indicates that, but the question is whether it is always the steer that is of the common grade that does not make the best gains, or whether it is due to some other consideration. I might say in answer to Professor Shaw's question straight out from the shoulder, which I have no hesitancy in doing, that I have always believed that the well bred steer would not only put his gains on better in places where it was more

valuable, but he would actually make more gain with a given amount of feed. (Applause.) But I have not yet been able to prove it; I have made some effort to. I don't mean to say by that that I started the experiment with the purpose of proving a certain point, but to determine the fact, and it did not prove that the well bred steer would make more gain for a given amount of feed than the common.

Prof. Shaw: May I ask how long that experiment continued?

Prof. Mumford: It continued six months.

Professor Shaw: Did you ever start with a well bred steer at birth and a common steer at birth, and grow them to the age of 30 months to determine that question? I did once.

Member: And didn't the common steer produce pound for pound as much for the feed as the best type?

Prof. Shaw: No, sir. No, sir.

Prof. Mumford: I will now take up the cattle we have before us and these three are indeed very high class specimens. These are the kind of cattle the market calls for loudly. They speak for themselves. You will find that in these cattle we have two very essential factors that the market demands, namely: prime condition and prime quality. Now you can get good fat on a common steer, but you can feed a common steer till doomsday, and you cannot make that steer have high class quality. For that reason we must have two essentials in every prime steer, namely, quality and condition.

Now here are these two Angus cattle; we have here a two-year-old and a yearling. They are of course coming two and coming three. This steer will be two years old and this one three in March. This one weighs approximately 1,550 pounds and this one 1,750. Now this steer, (indicating the younger, lighter one) is more nearly what the market cries for loudest than this one. The market is demanding more of this weight in cattle. You might say there is no difference, no appreciable difference in the quality or finish of these steers; they are both the best of its kind, but the weight—that weight is rather more popular than this. Where there might be one buyer for the heavier class of steer for the carload trade, there would be ten buyers for the lighter one. They might sell approximately at the same price. It is true that the tendency at the present time is toward the production of that kind of cattle, and I expect to see within the very next few years that that,—the heavier class of steer, will sell for more than the light one. Why? Because there will be fewer of them. That is the reason.

Member: Which is the export steer of the two?

Prof. Mumford: They are both export steers, but this is the better export steer. This steer weighs 1,500 pounds. The bulk of the export steers weigh 1,300 to 1,500 pounds at the present time. Except at Christmas time, that steer is too good a steer for export.

Now I will just call your attention briefly to these two steers at the left. (Indicating two thinnish steers). It is a good deal harder to tell a good steer when it is thin than it is to tell one when he is fat. In judging feeding steers you must be able to tell whether a steer has the conformation of a bullock that will grow into a prime steer. You understand, of course, these steers lack condition. If these steers were on the market today, they would be sold as killers; they would not be sold as feeding steers. They would not be such bad looking steers if you took the others out, but in here

they are in bad company; (Laughter), and they don't look so good: as I say, they both lack condition.

This one does not show his breeding: he does not show the quality that the Shorthorn shows; he is a little coarser, not quite as good in quality. I don't mean to say by that, that this would not be just as good a feeder or a better feeder than that one: he might, but this steer is thin. He is a good thrifty kind of a steer, but lacking in quality. As a killer, he lacks finish, and he is one of the kind that matures rather slowly, (indicating the Short-horn), but when he is finished he will be too high up for present demands. They are both good feeding steers, and would look all right if we didn't have the others here.

Member: Are the light weight cattle higher priced per pound than the older beef?

Prof. Mumford: I don't know that I can say that they are higher priced at the present time, and that is due to the scarcity of the heavier kinds very largely, not to the fact that there is more demand for the heavier ones, because that is not so. There is more demand for the baby beef, so-called, but the supply of the heavier kind is not so great, so it just about balances.

Member: Would it be more appropriate to raise baby beef than those kind?

Prof. Mumford: It depends entirely on conditions. I could not answer that unless I knew certainly your conditions. It is a good question. In some cases I think it would be better to produce the heavier steer, as you can then use the cheap feed; the baby beeves you must feed on high priced feed from the day they are born until the day they are sold, and you have to keep right after them, while with the other steers, you can let them rough it a little more.

Member: Can you take an inferior steer, and feed him up and make as good beef as with the well bred steer?

Prof. Mumford: No sir; not at all. I think I said the very farthest from that. I said right here in connection with these two steers that it is absolutely essential, if you want to make a high grade steer, to have the beef breed of the best sort and the best type of beef. You cannot take a common bred steer and make a prime steer out of him for beef; on the other hand, you cannot take a well bred steer and starve him to death and make a common bred steer.

Member: What is the best time to have calves dropped for the production of baby beef for the market?

Prof. Mumford: I should say the spring time.

Member: Why?

Prof. Mumford: Well in any cold climate,—I suppose you want me to answer this for Minnesota?

Member: Yes sir.

Prof. Mumford: In any reasonably cold climate, your expensive proposition,—where land is reasonable in price and not \$150 to \$200 per acre,—where land is reasonable in price, in a cold climate your expensive proposition is the wintering of the cow. Now it is very much more expensive to winter that cow when she is suckling a calf than when she is not. You can turn the cow out in the summer time, and the grass will do the rest until you get pretty close to weaning time. It is much more expensive to winter a cow with a suckling calf.

Member: If you have the calf from the middle to the last of September, and then let the cow run in the spring, and go right onto the grass, wouldn't that be cheaper than keeping the cow with the calf through all the previous winter?

Prof. Mumford: I doubt it. Ordinarily if you have your calf dropped in the fall you will winter your calf two winters; if you have it dropped in the summer you don't need to winter it but once.

Member: You should keep your cow in good condition while she is carrying the calf?

Prof. Mumford: To be sure, but if you will study Bulletin No. 111 of the Illinois station you will find how to do that cheaply.

Prof. Shaw: Can prime beef be made from a dairy steer? (Laughter.) (Speaker shook his head.)

Prof. Shaw: Hoorah! Hoorah! (Applause and laughter.)

Prof. Haecker: I just want to ask Prof. Mumford if he is answering that from his own personal knowledge?

Prof. Mumford: I didn't answer it.

Member: What is the breeding of these cattle?

Prof. Boss: We don't want to get off the fire-works until after dark. It won't make any difference, because you won't know the difference under lamp light, but we do expect to talk about these cattle this evening. This steer right in front you, the one in front of the platform is the yearling pure bred Angus, the champion yearling steer, and the reserve grand champion at the International, a year old or 12 months, and weighed 1,500 pounds at Chicago.

The other black steer just beyond here is 2 years old, pure bred Angus, just a year lacking 4 days older than the one that took first prize. He was awarded first prize Angus 2 year old steer.

This steer over here is a pure bred Hereford, two years old the 18th or 19th of October and weighed at Chicago 1,440 pounds. In his class of pure bred Hereford yearlings he stood first, and was reserve champion Hereford steer. Those three were shown at the International. These two over here were not. The farther one is a pure bred Hereford. These two are pure bred Angus.

Member: What is the weight of this one?

Prof. Boss: 1,075 pounds. He never has had anything except ordinary farm care and has not been on feed or crowded in any way. If he had been started from calf-hood as Professor Mumford says, he would have made a much better showing today, so he is not a type to have grow into a fancy steer as these others have done. That Angus was a year old in April and weighs 1,080 pounds, and has been grown under exactly the same conditions. He is a high grade Angus. We will tell you a little more about these steers tonight.

Dr. Currier: Will this yearling Angus ever mature during the feeding period equal to the other one?

Prof. Boss: No, he is too long legged, too raw boned.

Dr. Currier: Lacks the quality.

Prof. Boss: Lacks the quality.

Prof. Mumford: In partial answer to the last question of Prof. Shaw: In the last analysis I suppose we must admit that we cannot make the highest grade of beef from anything but a well bred beef steer. It is a similar proposition to the attempt to make the highest quality of flesh and

fat and the largest flow of milk in the same animal: you cannot quite do it. You cannot get the highest specialization in the dual purpose animal. The highest specialization should and usually does bring the highest quality of product. Now I think that answers it as well as I can. (Applause.)

Mr. Canfield: The next is a paper by R. C. Blackmer of Albert Lea. His paper will be read by Professor Boss, as Mr. Blackmer met with an accident and cannot be with us. The subject of the paper is the "Value of Yearly Records in Establishing Milking Qualities in Short Horn Cattle."

Prof. Boss: There will be a supper provided for the members in attendance here this evening, and don't be in a hurry to go. I noticed some were going out. I just mention this so you would understand the situation. There are occasionally people who go away from here hungry, but if they do, it is because we don't know they are hungry.

Mr. Blackmer has been known for a number of years as the "Blind Editor." He is the only man I think I ever saw who could tell more about a cow or a beef animal without his sight than I could with my eyes open. In other words, he seems to have made a careful study of the conformation required, of the qualities required in a Shorthorn cow, especially on cow's milk, and I would just about as soon take his judgment as to the color and things of that kind. He told me, by the way, that he could distinguish the white spots on a cow's hide with his fingers. I would just as soon take his judgment as my own if I wanted to pick out an individual in a breed. Unfortunately on account of an injury to his knee he is unable to be here, so I will read his paper in his absence.

IMPORTANCE OF THE OFFICIAL TEST FOR THE FURTHER DEVELOPMENT OF THE MILKING QUALITIES OF SHORTHORN CATTLE.

BY R. C. BLACKMEE, ALBERT LEA, MINN.

Read before the annual meeting of the Minnesota Live Stock Breeders' Association at the Minnesota Agricultural School Wednesday, January 9, 1907.

For some time past, under the overshadowing influence of the feeding business and the demand for a quick maturing steer in the corn belt and on the western ranges and the supremacy of this class of cattle in the show rings of Scotland, England and the United States, the Shorthorn breeders have paid little heed to the development or even the maintenance of the dairy qualities of their herds.

As the result, the popularity of the Shorthorn with the average farmer in many sections of the country has decreased measurably, and in the stronger dairy sections the Shorthorn has been or is being quite generally replaced by cows of the special dairy breeds,—Holstein, Guernsey and Jersey, leaving the Shorthorns confined more and more to the limits of the strictly feeding sections and the range where they find close competition from the Hereford and Angus breeds.

On all sides, we hear the inquiry among our farmers—"What has become of the old milking Shorthorns," and it is undeniably that they exist in far less numbers today than twenty years ago and that few breeding herds remain in the country where sires can be obtained that may be counted on to produce cows that will yield profitably at the pail.

If it is desirable for the Shorthorn breeders to retain, or we may say regain, the standing and demand for this breed in dairy sections and on high priced lands wherever farmers milk cows and enjoy the monthly cash receipts provided by the sale of milk and butter fat, it is necessary that some concerned and definite line of work should be undertaken by breeders of milking Shorthorns.

This definite work should be outlined and conducted under the fostering direction of the wealthy and powerful American Shorthorn Breeders' Association. Organized effort can accomplish much; independent effort little.

The Shorthorn association appears to be disposed to foster the development of the milking qualities of the breed and thus to increase the demand for this cattle in the dairy as well as in the feeding sections of the country.

In 1892, provision was made for the entry of Shorthorns in the dairy contest at the Chicago world's fair where very creditable records were made. Again in 1903, the Shorthorn association provided for entries in the dairy contest at the St. Louis fair. A year ago at the annual meeting of the association, resolutions were adopted providing for the establishment of a Shorthorn milking contest at state and national fairs and for the publication in appendices to herd books of the records of cows giving over eight thousand pounds of milk a year and for the recording of such cows in the herd books with stars following their names wherever they appear, to indicate their performance at the pail; the accuracy of the test to be affirmed by the affidavit of the owner of the animals tested.

In the judgment of many of those interested financially as breeders in the promotion of the dairy qualities of the Shorthorn, it is advisable that the Shorthorn association go one step further and provide for the official testing of individual cows for milk and butter fat production.

We ask that rules and regulations be adopted by the board of directors of the Shorthorn association to govern milking tests to be conducted under the personal inspection of representatives of state agricultural colleges and that the performances of cows which measure up to a certain definite standard to be fixed by the board of directors shall be given official publication in the Shorthorn herd books and the facts furnished the agricultural press of the country for the information of the farmers and breeders. All the expense of such tests shall be borne by the owners of the animals tested, save the publication of the result in the herd books and the advertising in the agricultural press.

The only way to tell what a steer gains is to weigh him. The only way to tell what a cow gives in milk and butter fat is to weigh and test the milk.

In no other way than by weighing and testing can the dairy qualities of any animal be accurately judged, and in no other way than by a system of official testing can any cattle association make any headway toward the development of the dairy qualities of its breed.

Private records of the milk and butter fat production of cows have been proven unreliable too often in the past to merit the confidence of the buyer of dairy stock, and far too often to warrant any cattle association in trusting to private records as a means of developing the dairy qualities of that breed.

The dishonest persons among the breeders will certify false records for publication in the herd books whenever it pays them to do so, and even the honest breeder reads his scales and test bottles always to the advantage of the cow in which he is interested as owner.

The Holstein and Guernsey associations have long since ceased to regard the private test as reliable. Both these associations have adopted an intelligent and inexpensive system of official testing. The official tests of the Jersey association are accepted as reliable by Jersey breeders who at the same time pay little heed to the private tests still recognized and published by the Jersey association.

It would be folly, therefore, for the Shorthorn association to report the mistakes of the associations of other dairy breeds and attempt to base its milking tests on private records. Instead, it should profit by the experience of its neighbors and proceed at once to the establishment of a system of official tests.

A cow to be profitably kept on any farm of forty dollars an acre and upward is expected to produce two calves within the period of a year and to give milk about ten months of that time. Clearly, the best test for milking qualities is a record of the weight and butter fat test of all the milk given during the entire period of lactation. But the making of an official test under the inspection of a paid representative of an agricultural college for so long a time would involve a heavy expense and it seems necessary, therefore, to limit the time requirement of an official test to a period of but a few days, say a week or ten days, making provision also for the recording and publication of longer official tests provided the owners of cattle wish to undertake them.

The weekly test, though short, furnishes a fairly accurate index to the actual value of the cow for dairy purposes provided the standard to which she must attain is made high enough. The weekly test can be made at a cost which any breeder of profitable dairy cattle can well afford. The weekly official test can also be used to check up the breeders private yearly record for the same animal.

We would make these four requirements for official tests for Shorthorns. 1st, the test should be conducted under the personal inspection of a representative of a state agricultural school appointed by the head of the proper department of such school; 2nd, the amount of milk at each milking should be determined by the weighing of the milk and the testing of the milk for butter by the Babcock method; 3rd, the test should be for a period of not less than seven days; 4th, all records should be affirmed by the affidavits of the representative of the agricultural college, the owner of the cow, the milker of the cow, and the representative of the agricultural school should be vouched for by the head of the department of that college under whose authority the record was produced.

Also I would add to these requirements, if the associations of the several dairy breeds would adopt the same rule, that no official weekly test should be conducted and recorded save where the cow to be tested had been six months in milk and three months with calf.

Such official tests of milking Shorthorns would be unquestionably reliable and accurate, valuable strains of blood heretofore unknown would be discovered and breeders would thus be put into possession of reliable facts concerning individual animals which would enable them to utilize the richest dairy blood in the further development of milking qualities in their herds.

Another important object to be gained by the official test is the protection of the farmer and buyer from dishonest breeders and the protection of the reliable breeder from the competition of the dishonest breeder.

Let us get down to officially determined figures in the measurement of the dairy qualities of our Shorthorn cattle, and then we shall have a sure and definite basis on which to work in developing the milking qualities of the breed and in restoring the Shorthorn to its old-time place in the dairy as well as in the feeding districts of the world.

Prof. Boss: Now there is just one other thing in connection with this supper. I would like to see a show of hands of those who would care to, or expect to, remain this evening. You are all invited; don't be bashful about it.

The hands were raised.

Prof. Boss: Well we will be able to take care of you and as many more.

Mr. Canfield: The next subject will be "Methods of Selecting Breeding Stock," by G. W. Patterson of Worthington. (Applause.)

"METHODS OF SELECTING BREEDING STOCK."

BY G. W. PATTERSON, OF WORTHINGTON.

Ladies and Gentlemen: "The Selection of Breeding Stock" is a big subject to discuss in fifteen minutes, the time allotted to me. We must therefore do it only in spots or "just touch the high places." The first thing to consider is, **Why we do select breeding stock.** One man will tell you it is to get beauty in the horse, another speed, another size, another bone, another feet, and so on with innumerable reasons, whether it be horses, cattle, sheep or swine. And it is true that all these things are to be considered, but are they the reasons **why we select?** Too often we lose sight of the main reason and go chasing after fads and fancies.

The Percheron man wants them black, the Clyde and Shire men want the feather on the legs, the Shorthorn man wants his cattle red, the Shropshire and Merino men want their sheep to be wooled on nose and legs, and so on through all the breeds.

The black Percheron when on the market for actual use sells at a discount compared with his grey brother. The feather-legged Clydes and Shires will not sell with their clean-legged mates.

The red steer will sell on the market for what he is worth on the block, and can you tell whether he was red, roan or white, or do you care?

I dare say that all the wool ever produced on sheep below the eyes and below the knees would not pay for the expense of taking it off, and we all know that it is an incumbrance to the sheep, and an actual detriment.

These are only a few of the things we are as breeders demanding because of foolish prejudice caused purely by fads and fancies with no sign of the practical.

To me it resolves itself right down to this;—it is only to get a better market for our farm products. The only reason we breed at all is because our grass and grain brings more net to the farmer when fed into stock than when sold on the market. Oats may be worth 25 cents per bushel on the farm to take to market. If they will bring 60 cents when fed to good lambs, then surely a farmer would be foolish that would not feed them.

We have found that when these lambs are ready for the market there is a difference in their market value. One bunch may have paid 20 cents per bushel for oats and corn, another bunch has paid 40 cents. One bunch will make a pound of gain on much less feed than another bunch. One bunch of ewes will produce 40 per cent of lambs, another bunch every ewe will have one lamb, many of them two, and in rare cases, three lambs.

If you have a flock of ewes that raise 40 per cent of lambs that pays 20 cents per bushel for the corn and oats they consume, and your neighbor has a flock that brings 150 per cent of lambs that pays 40 cents per bushel for the corn and oats they consume, do you think it would take you long to discover that there was something wrong? That you should do some selecting? You should find out what kind sold for the highest price when fat, the kind that would make the largest number of pounds out of a bushel of grain, the kind that would bring the largest per cent of lambs, and as nearly as possible combine all these and other desirable qualities in one sheep.

To bring the highest price they must be built to produce the largest possible per cent of choice cuts of meat. The ability to make the largest possible number of pounds out of a bushel of grain, is one of the most valuable qualities to be sought by a breeder of any kind of animals. It requires an animal to be strongly and well built with good back, long, well sprung ribs making a large barrel at middle filled with good big lungs, heart and digestive organs. It is the shop in which all the repairing and building of the whole body is done. Too much emphasis cannot be put on this. I have never yet seen an animal with short ribs that was a good one. It always means a small middle, with contracted organs therein, small capacity whether in the feed yard or in the harness.

To select well the good mother is a hard proposition and most of it will be done by your knowledge of the flock or by relying on the word of the owner.

Having selected the foundation flock or herd, most people are inclined to think their selecting is done, but if they are to be successful breeders it is only just begun. It is as important that you select well the animals to leave the flock as it is to well select the ones brought to it. I have always kept sheep when I had any stock and because of the fact that they breed younger than horses and cattle, one can get experience faster with them. For that reason I talk more about them than other animals, but nearly all of it will apply with as much force to other animals.

The first thing after selecting the foundation herd should be an intimate acquaintance with each animal, noting its peculiarities, its good and bad qualities. Where large numbers are kept the knowing of each one at sight is impossible. Marks may be resorted to that in one place mean one thing, in another, another thing. The ear is perhaps the best place to mark, and anyone can invent a system of marks for the ear that they will be able to express most anything necessary in a grade flock of sheep, and the breeders of pure-bred sheep should in all cases keep a written record of their flock noting the good and bad qualities of every sheep as fast as these qualities manifest themselves. You will find in most flocks, ewes that are poor milkers, poor mothers, having little or no motherly instinct, those that produce weaklings that die or tax the patience or ingenuity of the shepherd to keep them alive, those that have trouble at lambing time, bringing forth their young, shy breeders, barren ones and so on, indefinitely.

This is as true of the good qualities as of the bad and it is as important that her good qualities be recorded as her bad.

Now if no records are kept we do not know from what source all these troubles come. We do not know that by proper selection these and all other inherited troubles can be almost completely eradicated from the flock.

The mother that has any of these faults as surely transmits these faults to her offspring as she does her likeness, not for one generation, but on indefinitely.

These records are of more value to a breeder in selecting the sheep to sell and those to retain, than anything else I know of.

At lambing time is the best time to get acquainted with each individual ewe. To make this acquaintance so there can be no mistake and also to add in caring for and saving the lamb you should provide several small hurdles about four feet long, having them in a convenient place and things so arranged that they could be quickly made into pens arranged along the side of the barn. As the ewes drop the lambs, place each with her lambs in an individual pen. Keep her there one day or more as the necessities may require. Have your book and pencil and punch and paint ready. If you do not wish to make a record, and merely wish to decide between the choice and inferior mothers, you could mark the choice ones in the right ear, the poor mothers in the left. The moderate kind need not be marked, and then can be selected on individuality alone. It is well when marking the mothers to at the same time mark the lamb in the same way. If you keep a record, note the sort of ewe she is and then her qualities as a mother. The ewe that you would say of, "motherly instinct poor, poor milker, is just the ewe that will be the finest in the flock in the fall for she is sure to raise a lamb poorly fed, or lose it entirely." You will hate to select her as one to sell, but don't go around that record no matter if she be the choice of the flock. The one you record shows motherly instinct strong, good milker, and raised two nice lambs, will come in in the fall thin and inferior looking in appearance a cull, in reality one of the gems of the flock.

a price tempt you to part with the other.

Cut out the one and consider all her kin unmercifully, and do not let

This is easily done in your own flock, but they say the ram is half the flock and we must purchase one occasionally. You can select the individual rightly perhaps, but strange to say I have but once heard a man ask about the dam he was buying. If it was necessary to know this of the ewes you kept, then it is many more times important that the dam of the ram should be of the right kind.

Too often we give the male credit for all improvement. I would not detract one whit from the importance of a good male at the head of the flock or herd, but if you will show me good offspring from a poor mother that is poorly bred, I don't care what the sire is, I'll show you an exception. If you will show me poor offspring from a good mother that is well bred, no matter how poor the sire, I'll again show you an exception.

Member: Mr. Chairman, I would like to ask a few questions on that paper. I would like to ask Mr. Patterson whether he has followed that through,—kept those mothers, raised lambs from them, and have the lambs from those mothers out again for a series of years, so as to prove that this always worked out?

Mr. Patterson: I have had them for three generations. Of course there are some exceptions, but the exceptions are very rare. It works out almost invariably.

Member: Do you think any man could afford to do that if he is in the business at all, should he carry pure bred sheep or only grades?

Mr. Patterson: With grades I don't know as I would trouble to keep a record. There are too many of them, and this keeping a record is considerable of a job, and it could be done almost as well, not quite, by the notches in the ear. At lambing time we shut up the ewes,—put the ewes in a pen for two or three days, and she will show her good qualities or bad qualities usually. If she develops bad qualities, put her where you know she will go out of the flock that fall. If she develops into a splendid mother and shows a good individual, mark her to keep. With pure bred sheep no man can have good success unless he keeps a record of the good and bad ewes in the flock.

Member: Would you sell her to the butcher or the man who would come there determined to have your best sheep?

Mr. Patterson: I would try and sell her to the Agricultural College if I could. I worked that scheme this fall. (Laughter). No breeder of pure-bred animals can afford to breed to sell that kind of an animal.

MEAT CUTTING DEMONSTRATION.

D. A. Gaumnitz and W. H. Tomhave, St. Anthony Park, Minn.

Mr. Gaumnitz: People have been talking to you about growing steers of a certain conformation in order to get prime beef. They have also been talking to you about sheep of a certain conformation if you want the best sorts of carcasses, but you have never seen, perhaps, what effect this conformation has upon the carcass. We will try and show you that before we get through, but before we start in to cut the carcass, we want to say something about meat itself. It is the meat we are growing the carcasses for. That is the aim of the breeder as well as the feeder.

Now then meat is made up of several different parts, you might say. We have, first of all, the foundation work,—the bone. We must have bone in our meat. We can get along with a little bone as well as we can get along with lots of it. We also have the muscle fiber, and that again is surrounded by another sort of fiber called connective tissue, which is tough. Then in addition to that we have fat. Now then these are the features that go to make up meat. We have tough meat, and we have all sorts of meat, but there are some features that apply to all kinds of meat if it is prime. But you have got to have meat that has volume. You get volume in several different ways. First, when an animal begins to fatten its muscles begin to swell up. Now then it is this material that goes into this muscle cell that we desire very much. That is really the foundation work of the muscle fiber itself. We may think of these muscle cells as being made up somewhat like a link of bologna sausage: we have that filling on the inside and the skin on the outside.

Now then in the poor animal, the thin animal, we have that connective tissue in the same proportion as in the fat animal, or if anything we have much more of it in the poor animal the total amount is even greater than in the fat animal. You can see if we make these little Frankforters very fat, that the proportion of the filler to the skin around the outside will be very

much greater than it would be in a thin one; on the other hand, we have in the poor thin ones, just a little filler on the inside and lots of skin. You can see right away what you would choose: wouldn't you rather have the one that is well filled?

I don't know whether you have had an opportunity to study these meat cells and see what effect fattening an animal, rounding them out, has, but I have, and I have found as the animal fattens the cells are larger and the connective tissue seems to be thinner, and when we begin to fatten an animal we begin to get more of the muscle substance and less of the connective tissue, and the longer we feed, within certain limits, the better our meat gets. In addition to the swelling and enlarging of the cells, we have constantly made in between the fibers, the fat. The skin around the cells is changed to fat, or broken up, and with the enlargement of the cell we also have fat. We must have fat for flavor; we must have fat to go with the meat in order to bring about the correct flavor,—something that is right,—and unless we get those conditions we cannot have meat that is prime.

Now then where will we find this taking place? In what sort of an animal? That is one of the features we will come to soon. We must look for that in the animal that has thick meat over it. We certainly wouldn't go to the animal of the thin type: we would take the animal with the bundles of muscles to swell up and become thick: we would try to get the animals that are thick fleshed, in which the amount of bone is less in proportion to the total amount of meat than is the case with the animal that is more or less of that angular or skinny type.

Now then if you are buying meat, or if the butcher buys a carcass that has a large amount of meat in it, is he going to trim out that bone, or do you pay for it? You certainly pay for it, although you are very apt to kick on it. So the butcher in order to try to satisfy you tries to buy a carcass that has a very small percentage of bone in proportion to the meat; and of course when you get something of that kind, you have bought something that will please you more, and you will pay more for it, and he can afford to pay more for it. Further this butcher finds that there is also a difference in the way animals will dress. Animals that are of thick, compact conformation,—not carried to the extreme extent,—they will dress out a much larger percentage of meat than the animal that is very angular and not thick fleshed. In sheep and beef cattle we find a difference of at least ten per cent, and if you are buying a carload of steers, or just 1,000 pounds of steer, and if he dresses out 10 per cent more than another class of steer, that would give you 100 pounds more of meat. That particular conformation means something in these animals, and the buyers are willing to pay for the carcasses that will give such results. Now then if they will pay that difference, it is going to pay us to breed them if it don't cost us any more to feed them.

Now the question was brought up here this afternoon, whether it would cost more to feed the cow with the dairy conformation or with the beef conformation. Suppose you could grow them alike, point for point, but when you come to dress them, if one will dress more than the other, isn't that an argument in favor of the beef type?

In addition to just this sort of a conformation there is something about the condition or finish that we must think about. I told you it was necessary to have a little fat mixed with the muscle fibers to give the meat

flavor. We must have fat through the muscle fiber for another purpose. If we are going to ripen a carcass,—and by ripening a carcass,—ordinarily we would not ripen a carcass,—but our best butchers do ripen a carcass, that is they hang the carcass long enough to work, and ferment and cure up the meat, change the indigestible proteids into digestible or soluble ones: the same thing takes place in cheese: there is just as much difference in the meat, and if you have had a chance to try both, you will recognize the difference yourself. The thick conformed animal will fatten, and, consequently an animal of that kind may be cured best, because in the process of the working, mould forms on the outside surface. In a case where we have fat over the surface, the curing process may go on, and after it is through curing we can take a knife and take a little of the fat on the surface off, and still have enough left to cook the carcass with.

There is another thing we want to avoid in a carcass, and that is a rough conformation. It will not fatten evenly, and when we find an animal that will not fatten evenly we have an animal that will not cook right. Carcasses that have no fat on the surface are usually carcasses that are "watery": you have heard of "watery" carcasses, or "grass" carcasses, and the buyers will dock you on those carcasses. If one of these carcasses were finished (carcasses on the block), they would not shrink in the process of cooking.

Now those are some of the features we want. We want volume, thickness in the meat, and we want that brought about, of course, by enlarging these cells and placing fat between them. That gives tenderness, flavor and quantity. We also want fat on the surface so that they will cook right, and may also be cured properly.

Now in this case, we have here on your right a carcass (sheep) that is very broad in the back. The ribs are well sprung,—spring out wide; the ribs keep on springing clear around; almost cylindrical in shape. Notice the width. This is a lamb, a yearling; you notice the great depth. This looks like one of those greyhounds (referring to the thin carcass). A carcass of that kind cannot hope to give you any great amount of meat, at least thick meat. We will just go to work and cut these two animals right through the brisket, and I want to show you something else. We have two animals here, we will take it for granted of a like diameter. Usually we are told by men who make a study of this that the larger they are through the heart girth, the greater the room for the internal organs. This does not always follow, because if our diameters or circumferences are alike, then the hole of course in the centre must be similar.

Prof. Shaw: Does it generally follow?

Mr. Gaumnitz: No it does not generally follow. It never has in our experience at least, both with beef cattle, with pigs and with sheep.

The animal that has the rib that is sprung slightly, and then runs down straight, gives us the greatest capacity internally. I was quite surprised when I first found that out, but it is mighty logical when you come to think about it. I will be able to show you these directly.

Now while Mr. Tomhave is cutting the other one, I want to show you what I mean by thickness. Now notice the thickness of the chop at that point; thick from top to bottom, a large eye in it: the muscle is swelled: we have fat laid in, and yet there is not too much fat; perhaps just a trifle more than we would care to have on the outside. Notice also as we get out to the lower portion, that this muscle, even at this point, is expanded, is

thick. Of course I will admit that this animal (thin one). If this one is fatted a little more there is no question but what we will have more volume, more expanse through these pieces of meat, but this animal, with the same feeling as we have given to this animal, would never be put in the same condition.

(Portion of thin animal taken up). Now look at this one. Look at the circumference. Look at the diameter. Do you see the difference? We have tried this and worked it out with animals that weigh exactly the same, and we have found in the great majority of cases that the opening here was much larger in an animal of that conformation.

Now we will pass on to this part. Notice the expanse of muscle here is not as much as the expanse of muscle in that case. It is that volume, that thickness of muscle that we have got to look for. We have got to have that if we get the tenderness, and always, wherever you go, animals of that kind, (thin kind) even though fatted the same way, are usually more stringy, pore tough. They could not be anything else, because didn't we see when we began, if those sausage links, if not filled out full, were going to be tough and stringy. That is exactly what you get in this, (thin animal), and that conformation always gives it to you. In separating the cheaper cuts from the better cuts, we will find we have to cut a little higher, and leave these ribs much longer below here in order to get something that will pass off on the market.

Now Mr. Tomhave will take off the "plates" and we will make a division between the good parts and the cheap parts. In cutting up any carcass that is what our aim should be,—to separate the good parts from the poor parts, and to keep each one separately, not mixing the good meats with the poor meats. The housewife has enough to do to prepare the good meats separately and the poor meats separately. They should be separated, and the good butcher will do that. All butchers do not do that.

Member: Isn't the lamb in a good deal better condition than the other one?

Mr. Gaumnitz: Yes, the lamb is carrying a little more fat, but if it were not for some of the various defects, we should have all the more muscle in this case.

Member: What breed are the sheep?

Mr. Gaumnitz: This is a grade Southdown, and this other is a Ram-bouilet. But the breed shouldn't enter in; it is the type,—the narrow sprung rib, mangy type, we can find in the Southdown as well as we can here. We are just trying to find out whether we should grow the broad, thick, compact sheep.

(Holds up another piece, one part from each sheep).

Now then if I were to ask you which you would rather have, which would you say?

A voice: The left hand one.

Mr. Gaumnitz: How many would rather take this one? (Holding up part of the thick sheep). I know I would rather take this one, although this is just a trifle fatter than I would care to have it, but I would like to have that, and I will tell you why: we find in this one we get a little nearer the right conformation, it is wider, and in this case we get a more tender meat: I know that is going to be tender (thick animal), and I know this is going to be stringy (thin animal), unless it is cooked all to pieces, and even then it is going to be stringier than in this case: and in proportion

to the size of the sheep we will find much more of that kind of meat in this one than in this other. So we have more stew in this good animal, and it is also better than it is in this one: even though you do get stew out of this one (thin animal) it is not as good as what you get from the other, at least generally speaking.

Now we want to make a comparison again of the muscles from the rear. Now there is something that is pretty nice. It does not look so bad after all, but you can see at once that this animal has that muscle swelled out very much more than this other one. Of course this fat is making this look a little bit larger, but don't let that bother your eye, but just take the muscles as they are. This sheep has the advantage, because it is really an older sheep. The older one always has more development than a younger one.

Now in weighing these parts too,—just look them over; you can see which is the heavier in the carcass. This rack and the loin are the parts that sell for the highest prices in the packing districts. The value is placed upon them because hotels are willing to pay the price, and will pay for prime lamb as high as 20c a pound for that sort of cut, simply because they can use it to so good advantage. For the housewife, probably the mutton leg is just as valuable, but the rack and the loin are commanding higher prices. So it is up to us to get the sheep that is well developed in the back, all along the back, from the loin up, because they sell the best.

Just taking a view of the front of that cut there, you will see that that one has not near the "eye" in front that this one has; and it will cut out, even of that part, more than the one of the poor type. We will have this cut so we will get a chance to look at the real eye where it is not interfered with by several other pieces of muscle. In the meantime we will take time to look at a few lambs of this conformation.

(Two live sheep, representing as closely as possible the two types under discussion, were here brought before the audience).

(Holding up a part cut from each of the carcasses). Again looking at the "eyes" of these two chops, you can see that the greatest expanse is in this piece (thick animal), and that the muscles down below are very much better developed down here on the side of the rib in this case. Now it is that thickness of muscle, that "eye" and the way that fat is laid in there, that gives value to that rack and to that loin. And notice the conformation of this sort of a back is wide, the ribs greatly sprung in this case, they go right up and start out for a long chase. These are the kind we don't want (thin kind) to grow; this is the kind (thick sheep) we want to grow.

Now we have here samples of the sheep we slaughtered. This one is longer and deeper in the ribs than this one. We want ribs of a certain conformation,—sprung and round; don't want them to come out just a little bit and then dropping down as though they were going down into a well or something of that kind.

Notice that this kind of sheep is very much, and this other kind here even though they would fat and grow pound for pound just as economically as those, an animal of this kind (narrow backed) never makes a really good carcass. Notice the length of this shank here (the broad backed sheep); notice his width; notice his great depth here, and notice how flat he is. Of course he is covered with wool here; if I had a fur coat on, you couldn't tell what I was like. But this sheep's ribs spring a little bit (thin sheep) and down they go. Notice in this case his shanks are not small down

below. Notice the width of the ribs (thick sheep) at this point; the ribs curve all the way down.

Member: Are those both lambs?

Mr. Gaumnitz: No, sir. This one is a yearling, and this one a lamb.

Member: What is the breed?

Mr. Gaumnitz: This is a grade Rambouillet and this a grade Southdown. But it is the type we are trying to fix in your mind,—the type that brings the highest price, and why it brings the highest price. The muscles are better developed in this type than in this one. These sheep have been developed especially for wool and not so much for mutton.

Now I will show you the difference in the legs of these two. As you look at them that way, do you notice any difference in the thickness of the leg below? Which is going to cook the better? Look at them from the front. Look at the difference in the depth and the fullness of the ribs; the difference from the hock up to the stifle. This is muscled down more; it is a thicker piece of meat, and a more tender piece of meat.

Member: Mr. Gaumnitz, is that lamb about the same age as that carcass there?

Mr. Gaumnitz: Yes, about the same age.

Member: What breed are those? Southdowns?

Mr. Gaumnitz: This one is from a Southdown sire and a grade Dorset ewe. That one there is a twin lamb to this one (carcass).

Now the time is getting late and I think some of you would like to go down and see the stock, and some have other business to do before supper, and so I will stop here. If there are any questions, I will take those up.

Prof. Boss: I think that I should explain to you that at 6:30 the supper will be at the dining hall. You are free to stay and ask questions and inspect the mutton here, or go to the stock barns, or go through this barn, or any place you please. You will see some dirty spots and some dirty corners, but you will see us just in every day clothes, or a little worse than every day clothes, because we have been attending this meeting, and doing other things we don't ordinarily do; but go where you wish, and look through the buildings, but be at the dining hall at 6:30. There is one other thing: any of the members who wish to pay their dues will pay them to Mr. Farley at the left,—at the little desk at the left. He will take your money and give you a receipt.

EVENING SESSION.

WEDNESDAY, JAN. 9th, 1907.

Dean W. M. Liggett presiding.

Dean Liggett: Ladies and Gentlemen, I want to congratulate you again tonight for the splendid effort you have made in our annual meeting. You began this business right yesterday morning, and you have kept it up. I think it is very kind indeed in you to come out this very cold evening, so far from Minneapolis, where everything was comfortable, and hold your session here. We are glad you are out here, and having the opportunity of visiting our school, and we are glad indeed to give you a bite of supper this evening, so you can go home more comfortable than you otherwise would. And when you leave here, we will endeavor to transport you down to the car line. We are going to provide transportation for some, as many as we can. I am glad to see you here, and I find these audiences are still increasing, and next year I hope we will have another good crowd.

Dr. Brown of Ohio, an associate of mine in the State farm business of my former state of Ohio, is here tonight. You will remember he delivered a very interesting address yesterday afternoon, and he has kindly consented to say a word this evening. He don't want it to be called a speech. I am very glad he is to be with us, and I take pleasure in presenting to you Dr. Brown of Hillsboro, Ohio. (Applause).

ADRESSES.

BY DR. H. M. BROWN.

Ladies and Gentlemen: I have first a confession to make, and that is that I have nothing to say. That is, nothing fixed, upon which I could base my remarks, for the reason that I was not expecting to appear tonight. I did not know I was on the program until a day or two ago, and then I was told nothing was expected, only a minute or two talk. Professor Boss and Dean Liggett said to me that the whole meeting only covered twenty-five minutes, and that there were seven or eight to speak, and I thought that was easy, so I came unprepared, and when I do come unprepared to make a talk and am expecting to talk, then I rely upon those things which impress me most and which are uppermost in my conception and understanding at that particular time.

The things that come into my mind as being the most forcible impressions that I have received are so numerous since coming to this place, that it is hard for me to select anything upon which to base a few remarks. But among other things, is the weather you have in Minneapolis and St. Paul, which has been constantly moderating ever since we came, and is now, as you know, most comfortable and warm. (Laughter and applause).

The other things that have seriously impressed themselves upon my mind, among them is this wonderful? for the the teaching of the farmers and

agriculturists of this state. (Applause). And I can say, without wishing to be stereotyped in these remarks, and in serious earnest, that I have not seen the equipment, and effort, and the success any place in any of my experience, like this. The wonderful progress that this great, young state has made in a few years, and the wonderful progress that this particular institution has made in its short life, I think is phenomenal. And it depends, as a matter of course, on the stability and the character of the men that are behind it, and I wish to say here, that I have observed of your citizenship, that it is of a good quality all around, and I have been making an effort since coming here to clear up in my own mind why it is that your citizens are all so vigorous, and I have finally decided why it is: The balance of them are all frozen to death, (laughter and applause), and you have nothing but good ones left,—those that are the fittest.

There is another thing that impresses me as being a thing that in this state you ought to be proud of, and that is the liberality of your legislature. It is pretty hard to get legislators in general to comprehend the greatness and the importance and the real necessity of developing the greatest of our resources, which everyone will recognize at once as being agriculture here in this state.

Now there are a great many other things I might say, that have impressed me since being here, but we will leave those, and I wish now to speak upon something which has recently come up in my mind, within the last five minutes; since I got on my feet I have got an idea—got on my feet and immediately I have developed an idea. (Laughter). Perhaps a few of you know that my profession is that of a breeder of live stock. I am a breeder of Angus cattle; I am also a breeder of two kinds of sheep and three kinds of swine. In connection with my business I have been across the ocean a few times, securing animals for new blood to instill in these different herds and flocks, and whilst there I have discovered that there are across the water a great many men in the business of breeding for the love of it in the first place, and the next place, for the benefit of posterity; not with any notion of making money, but with an eye single to the improving of breeds, regardless of the money which comes from it and when you go to buy from them, they say as a matter of course "I will sell you something if there is anything here that you want, I will let you have it at a price that is reasonable, but really I have nothing to sell. My business is to breed, to improve the breed, without any view of a business."

Now among all this vast number of students that are now here, and have been here, and will come, I would like for someone who has means enough and the devotion to the cause, to go to work and breed some line of live stock for the love of it,—not with any notion of getting physically bred animals, not with any view to self-aggrandizement or of enriching his pocket book, but simply for the love of it, go on and do something along those lines, pick out the very best and discard those that are not good, and develop a wonderfully select herd of something or another in the way of animals that he likes,—that he fancies himself. Now that young man, if he happens to be here, if he would make that resolution and go out and do, and finally develop something great, something perfect, something better than anything else, then as a matter of course the emolument comes, and it will make him a rich man, and he would feel that he has accomplished a great deal, and his fellow citizens would regard him as a great benefactor. That I would like to see done by some of the alumni of this institution.

I could speak of many other things that have impressed me here, but if there is only twenty-five minutes, and there are six or seven more to speak, I think possibly I had better leave it off just here. (Applause).

The show steers were brought in at this time.

Dean Liggett: These steers here represented were exhibited at the International, and Professor Boss will tell you about their winnings and what they are. He will announce the names of what they are as they come by.

Prof. Boss: The first steer you see here is a pure-bred Hereford steer, bred in Missouri. I will say for the benefit of the stock men who may be here who are familiar with International affairs, that he was bred by John Letham, the manager of Mr. S. R. Brock's farm at Macon, Missouri. He was two years old the 18th or 19th of October, and weighed at Chicago 1,470 pounds. That is, he was just about a month over two years old. In his class of pure-bred Hereford yearling steers, he stood first. He was reserve champion Hereford steer in competition with a Hereford calf that finally made Grand Champion. He was reserve yearling steer over all other breeds in the class, competing with the Angus, Hereford, grade cross breeds and the Shorthorns. He was the second best steer of all the prize winners. Those are the winnings he made in the International classes.

Member: How long have you had him here?

Prof. Boss: We bought him a year ago in September at the International Exposition as a calf. He has been here a little over a year. Since we have had him he has made, as I recall it, just about 2 pounds a day right through the year.

Member: What price did you pay for him?

Prof. Boss: We paid \$150 for him.

Member: He came within one of what you wanted him to do?

Prof. Boss: Yes, he came within one of it, and he has another chance yet, you know. (Applause.)

The black steer you see is a yearling; that is he showed as a yearling grade Angus. He also was two years old last fall,—two years old in September and weighed at Chicago just about 1,500 pounds; I have forgotten the exact weight. He was bred by Mr. Lew Kerr, of Newton, Indiana, and purchased by us at the International Exposition last year as a calf at nine cents a pound; the purchase price at his weight was something like \$65. In his class which was probably one of the hardest classes at the Exposition, —senior grade yearling,—he stood first. I think the class contained about thirty steers. In that same class he was given third prize in the Angus grade. The Angus Association offers special prizes for the Angus grade cattle, and he was awarded first prize, afterward winning the special prize in a competition in another championship in a grade higher. These are individual winnings I am giving you now.

The steer that has just come before me now is "Black Jack," a pure-bred Angus steer, two years old last March; he will be three years old the 8th of next March. He was awarded first prize Angus two-year-old steer. He was also in the championship classes, made the reserve champion two year old, competing with the Shorthorn two year old., Hereford, Galloway and grade cross-bred: in the five he was made second best, or made reserve in that class. Those were his individual winnings.

I will say this, that we counted this our best steer before we went to Chicago. We thought this was the one who stood the best chance of getting the Grand Championship, though, as you may have heard, our cattle

were in a wreck on the way to Chicago, and it hurt the showing of the steer. I think he showed up sagged in the back a little at Chicago,—something he never showed before, and I think he never showed at home; it may have been due to the wreck. His weight at Chicago was about 1,750 pounds, 1,740 or 50, as I recall it, at two years and ten months of age.

Member: Who was he bred by?

Prof. Boss: By the Woodlawn Farm,—B. R. and Stanley R. Pierce, of Creston, Illinois. He also was purchased last year at the International, as was this one also who comes next. He was the first prize steer in the one year old Angus class; first prize in the Angus one year old class, champion yearling steer. He was made the champion yearling steer with the Hereford at the other end, standing second to him. This was the champion yearling steer of all breeds. The Hereford was the champion reserve yearling over all breeds. He weighed at Chicago 1,500 pounds. The gain on this lot, the average for the whole lot runs right around a pound and three-quarters a day.

Member: How much feed did you give them?

Prof. Boss: I cannot tell you at this time. I have tried to follow the rations since we came home. When they were being fattened along through October and November, Black Jack, for instance, received from, well, from 14 to 17 pounds per day of bran, oats, corn and oil meal,—that is a mixture. I cannot give you just the proportion, but you can see it down stairs. The other steers received about the same ration in proportion to their weight, and I would say in reply to that question that the amount of feed they get and the amount of gain they make depends very largely on the judgment of Mr. Craig, the feeder. (Applause.) We do attempt to—

Voces: What's the matter with Craig?

Answering Voices: He's all right!

Voces: Who's all right?

Answering Voices: Craig! (Applause and laughter.)

Prof. Boss: I was just starting to say, that we do attempt to feed scientifically or reasonably so, and while we may calculate the rations and suggest to Mr. Craig what might be fed, we leave it to his judgment and his observation as to whether he shall follow them or not.

Now steers are a good deal like men when you come to understand them. What agrees with one steer won't agree with another. Some of you men may have turned up your noses at the dinner you got this evening, (laughter), and we find that same trouble with the steers. I will say this to the credit of Mr. Craig, that I don't think he ever put a feed in front of one of these steers when the animal didn't relish it. He may on one or two occasions, but it didn't happen the second time, and none of the steers were off fed or out of sorts at any time. We have had the intention of showing him again as a two year old,—the one on this side may be shown,—it depends on what he does.

The little steer on this end we called a calf and he is a living representative of what Dr. Brown is doing in Ohio. He was purchased from Dr. Brown last May after he was weaned and on dry feed for I don't know how long. He reached us in May,—I have forgotten the exact date. He was in thin flesh and showed at a disadvantage in Chicago, and notwithstanding he had but a month to six weeks to get into good shape,—we didn't know we were going to show him until October,—notwithstanding that fact he made 100 pounds a month practically for three months through the summer, of course getting all the fresh milk from the cow and anything else he liked.

Member: What did you pay for him?

Prof. Boss. One hundred and fifty dollars. Now I will say a word just on that point. That may seem like a big price to pay to a man not raising pure-bred animals, but a man cannot afford to sell for any less than he could get him for, as a sire, but if we want good steers we would have to pay about what he would sell him for as a sire. This steer stood second in his class. He could just about as well have stood first. He was considered one of the very best prospects in the class for next year's yearlings. That was the opinion of men who were supposed to know.

Dr. Brown: I was very much interested in that calf as a matter of course, because I bred him, and I was watching very closely when the judging was going on, and when it was over, I talked to the men who held the steer that stood first, and the judge who judged them, both at the same time, all three of us together,—and they both said this was a very much better steer than the one that took first place, and Mr. Stanley Pierce was the man who had the other steer, and Mr. Pfaelzer judged him; he hesitated whether to give first place to this calf or the other one; he said he gave it to the other one because he was in better condition for the butcher at that particular time, and it was what they are, and not what they will be, but at that time he said that that was really the best steer in the lot. (Applause).

Member: What object is sought to be gained by feeding these prize steers?

Prof. Boss: The gentleman asks what is sought to be gained by feeding these prize steers. I was going to say a little later on, that all of these steers have been purchased with a high standard of quality in mind. We are running here quite a large college. We have a lot of animal husbandry students. We are not putting right ideals before those students unless we give them the best pattern to work to, and I will say this, that when we bought those steers at Chicago last fall, we hardly thought we would show them at Chicago this fall. We bought the steers for class room laboratory material. That is our object in feeding them. We didn't expect to make money, although we have made money on them from a feeder's standpoint and a showman's standpoint this year. It is done for the benefit of the young men, and young women also, because they are going to study types of sheep, and horses and cattle and swine, just the same as the boys are. Does that answer your question? (Applause).

Now the three black steers you see at this end are the pure-bred Angus steers. They are two years old, yearling and a calf. These three animals were the champion steer herd of the Exposition, beating the three Shorthorn steers, the three Hereford steers, the three Galloway steers and the three grade or cross-bred steers. Those three steers cost us \$650 in money. They won at the Exposition in individual prizes \$775, as I remember it.

The two steers at the other end, added to these three, made our showing of College steers five head in the herd, and were awarded the championship,—the champion herd of five steers at the Exposition, competing with the Iowa College, the Kansas College, the Ohio and the Indiana, as I remember it. (Applause).

The total prize winnings of these five steers is exactly \$1,050 at the International show.

Dr. Brown: What's the matter with Minnesota?

Voices: She's all right.

Member: That pays Minnesota for feeding five steers, don't it?

Prof. Boss: There is just one element of regret in this matter, and that is that I cannot say that any of these steers were bred in the state of Minnesota. Clear Lake Jute you know was bred in Minnesota. I believe when you young men will follow Dr. Brown's advice, and breed stock for the love of the business, that then we can have such stock as this bred in Minnesota.

Member: May I ask if that leading steer there is an inbred steer?

Dr. Brown: The sire of that steer I bought in Scotland. I paid \$1,000 for him, and I traveled three hundred miles to examine his ancestry before I bought him, after I saw him. Before I started I thought his ancestors were all brothers and sisters almost; they were so near to it that they looked very much alike, but nevertheless when I saw them, their individuality was so good that I took him. On the dam side there are two direct crosses in the pedigree, one on the sire's side and one on the dam's side, in which the sire and dam are the sire and dam of the two individuals that were bred together. That occurs twice in the pedigree, and on the sire's side there was a great deal of inbreeding.

Member: He is inbred then?

Dr. Brown: Yes.

Prof. Boss: Now I have told you as briefly as possible just what the steers have done, I cannot afford the time to tell you very much about their feeding.

I do not wish to lose this opportunity to say to all these men who have been attending the meetings, that these addresses will close tonight, and under the auspices of the society that you have been hearing these things from here you cannot hear any more, but these lectures and addresses will be followed up for a week in the Farmers' Short Course. If you want to hear anything more about it, you will have to register as a short course student. (Applause).

Dean Liggett: I am requested to make the announcement that the Credentials Committee will meet here at this stand immediately after the exercises are over. Please remember that the entire committee on credentials will meet here at this stand immediately after the exercises are over.

Prof. Shaw: Dr. Brown, is this steer an inbred steer or a steer that is the result of an outcross?

(The horses were brought in at this time).

Dr. Brown: The horses were making a noise, but my understanding is that Professor Shaw wishes to know of me whether this steer is an inbred steer or a steer that is the result of an outcross. He is the result of an outcross upon an inbred foundation, which perpetuates and fixes the type and holds it according to its own foundation, regardless of the outcrosses that are put into the animal. (Applause).

Dean Liggett: The next address will be given by Mr. Crandall on draft horses. I take pleasure in introducing to you Mr. Crandall.

DRAFT HORSES,—PERCHERONS, CLYDESDALES, BELGIANS.

BY CHAS. B. CRANDALL, RANDOLPH, MINN.

Mr. President, Ladies and Gentlemen: Mr. Boss has assigned me the pretty difficult task of giving you a little talk upon the draft horse. He has chosen for me a subject that is a good deal like the horse I have to talk about,—it is a pretty large one.

There was a young lady visiting a farmer, and they were engaged in raising draft horses; she heard the little boy using the term draft horse, and she asked him what it means; she thought it meant some new breed of horses, and she was surprised when he said, "A draft horse is a great big work horse." That is a proper definition pure and simple.

I have a paper prepared here that I will read.

That agriculture is the primary base upon which the material greatness of our country rests, no one will deny, and it is equally true that no important part of that industry can be long neglected without disaster, and yet one of its most important branches, horse breeding, was almost wholly neglected for five years preceding '98.

The industry was in a state of panic. A great fear pervaded the minds of the breeders that electricity was about to supersede horses as a motive power, and hence, the great mother brood-mares of this country were sent to market. The falsity of this opinion is demonstrated by the fact that no invention of the century has lessened the work of the horse on the farm—while nearly every improvement in agricultural methods has necessitated the use of more horses, moreover it is a statistical fact that in all the great cities more horses are now being used according to population than were in use ten years ago.

As we are drawn together by improved transportation facilities we become more and more conscious that the inflexible principles of evolution—the survival of the fittest—is bringing every individual under its law and that every man who would succeed must measure his work by the standard of the best that others are doing. Our horse breeders must bear in mind that their product like all others of our field and shop are penetrating every market of the world, and prepare themselves to meet competition of every kind by the wise selection of the highest type, by proper mating and good care.

Despite the fact that the draft horses have always left with their breeders, at least, the costs of production, and, averaging one year with another a handsome profit besides. Draft horses have never in the United States laid down the swath which the utility and value have entitled them to cut. Why this has been so may be explained in various ways, but a few facts stand out so plainly that they cannot be passed over.

As affecting the market supply of draft geldings never large, and now all too short, the main deterrent has been the lack of stability of effort.

In his horse breeding business the American farmer, and he is the horse breeder of this country, has proved fickle, and easily diverted from his purpose. His creed is buttoned with a pin, and he is switched and changed from Shire to Percheron—from Percheron to the trotter—from that to clydesdale or belgian, and in the end wound up with a large amount of nothing but the firmly rooted conviction that breeding of horses does not pay.

The net results of this off again and on again policy is that before anything like a full supply of draft gelding can be reared for the wholesale markets, the mares to foal them must be born into the world.

The few men who had faith in the business and proved it by their work in keeping on their good heavy mares are reaping a golden harvest, as good weighty horses are selling today for more than they ever before brought in the history of the world. Draft horses are not native to American soil, and the business of supplying stallions to beget them from the native mares was conceived in the wrong spirit. It was brought forth as a money-making scheme—pure and simple, and such a thing as united effort for the advancement of the common good was never heard of. There is no question that the French horses brought to Canada, and the English cart horses brought to Pennsylvania between the beginning of the last century, and the war of rebellion did a vast amount of good. These two strains of draft horses that drifted into Illinois with some of the earlier settlers certainly furnished a foundation for the fabric raised later, but there is just a little doubt that if earlier opportunities had been seized, greater success would have followed. These earlier imported sires were chosen because they looked like breeding what was wanted.

During all these years of up-breeding and importing, few men have become of pure-bred draft horses. There seems to be an impression that there can be no dignity attached to the production of heavy horses. The importers proclaim that the native bred horses never can be bred in America as good as across the water. The most common clincher used in such arguments is with reference to the mares. Where were the American breeders to get mares good enough to breed good colts? They could not be bought. Where could they get them if the old country folks would not sell them? This went with many a man, and from the very beginning to the present time the importing dealer has had the best of the breeder in almost every instance.

There are a few shining examples of success in the breeding business, but they are few indeed. It is, perhaps, an unnecessary task to prove that such a statement is the merest buncombe. Has not Col. Hallway bred winners male and female, at the Highland show in Scotland? And are not some stallions of his breeding among the most successful in Scotland today? Have not the products of Durham Lawn, and Blairgowrie been the Canadian champions for years? But why go further—the facts speak for themselves.

Was not the champion Percheron mare of the International this year a home bred one? . And the champion group get of sire, home bred? And how about the big geldings of Chicago? They have met and defeated all comers. They stand pre-eminent, a living monument showing what can be done in this country if we but would, and I want to emphasize the fact, we have as good mares reared in this country as one will find in the world.

Dr. Curryer: Now speaking of the quality of the draft horse. You couldn't be much of a horse talker unless you spoke of the quality of the draft horse. Will you explain to us what you really mean by quality?

Mr. Crandall: I am just coming to that doctor.

Dr. Curryer: Am glad of it.

Mr. Crandall: It is that which makes it most useful for what he is intended for. The little boy says the draft horse is a "great big work horse." The better draft horse the better work horse he is, and the better work horse he is the better draft horse he is. Defining the quality of a draft horse puts one in about the same position that you put a physician,—when

he once has diagnosed the case, the remedy asserts itself: the remedy is known when you get the case properly diagnosed. If quality doesn't mean this; if this is not a proper definition for quality, quality isn't worth bothering any more with. Now most people speak of quality in just the general term, but quality applied in a general way means to me fineness. If a horse possesses draft horse quality, it denotes strength and power, and the capability of getting out and horsing the big loads of our country and standing up under the work. Now they speak of quality in regard to his limbs, as hollow-ground, fluted out. Let me tell you that quality should mean ruggedness in the draft horse,—durability,—mind you he is a work horse, and the work horse that will outwork the other horse has the best quality. Is that sufficient, doctor?

Dr. Curryer: That is all right.

Mr. Crandall: Well I think that is all.

Prof. Boss: Are you going to say a word about the horses?

Member: Isn't it a fact that a lot of flesh on a horse makes him look like a better horse than he would without it?

Mr. Crandall: I would say, yes.

Member: Well if that is the case, isn't your accusation against the judge erroneous,—isn't it a fact that the exhibitor, when he feeds the horse and puts on that excessive fat, realizes that the judge has a type in mind, and that by fattening the horse up he will make him appear like a better type than he has got, and he will try to fat him up for what he lacks in ability, and in that way influence the judge by his good appearance; isn't that the reason we put the fat on? I have showed a little myself, and the reason I put the fat on is because the judge always gave it to the fat horses, and I wanted to take part of the premiums. (Laughter).

Mr. Crandall: Excessive fat does not add to the beauty of the horse. It makes him look more gross and heavier; and right there lies a fault,—that we are not breeding them heavy enough, but make up the size in fat, which is detrimental to him in every way. It brings out nothing better. Now quality is often-times taken for finish. Take for instance the great geldings owned by Armour & Company in Chicago. If you reduce Jim 400 pounds in his weight, he would not possess sufficient quality to suit most of the people doing the judging. They would call him gross. As an over-fat horse he shows extreme quality. When he is thin in flesh he lacks quality. Now quality is not given by any amount of feeding. It is inherited. It is given to him by his dam and his sire, and you can not take it away from him. But often times I think this mistake is made,—very often,—that finish is mistaken for quality.

Member: Is a show horse fit to go out to do the work?

Mr. Crandall: Well yes, some show horses are. I don't necessarily mean that a show horse is not a good work horse, for a show horse should be the best work horse, but often-times it is the other way, that the show horse, extremely fat, is not a good horse thin or in working condition. Now all these horses that have flash and dash and knee action, they have got to leave it all when they are horsing the stone boat; it is the big-over fellow, with immense bone that is of the right quality to stand the work of all the street and does not show grief. Invariably the high-headed, great acting horse does not have the strength he ought to have, but he shows good at the show.

You take the two first horses here: they belong to the Belgian breed, and they are very good types of the breed. I am not a Belgian man, but I have been around them lots. This horse (indicating) is the larger horse of the two and shows a little more bone than the other horse. While this horse (another horse) is smaller, he is better proportioned; he is a better turned horse, and he has a little the advantage of this horse in the bone. This horse is the preferable horse of the two as far as my judgment goes.

Member: What horse is that?

Mr. Crandall: The roan horse. The other three horses are Percheron horses.

Member: What are the ages?

Mr. Crandall: Will you give us the ages of these horses, Mr. McLaughlin?

Mr. McLaughlin: Two years old. These three are two year olds.

Mr. Crandall: They are surely wonderful specimens of the breed for that age. You will notice they all have good rugged bones. I would like to ask Mr. McLaughlin, the owner of these horses, to indicate to us the horses which won prizes at the expositions or shows.

Mr. McLaughlin: This two year old we didn't show at the International because he was hurt the night before the show.

This is "Distingue" a French coach horse. He was first prize three year old, French coach stallion and the reserve champion of all ages at the International Live Stock Show at Chicago.

This is the two year old Belgian stallion "Comique." He was the first prize two year old at the Ohio State Fair, and at the American Royal Live Stock Exposition at Kansas City; first prize at the Missouri State Fair and first prize at the Inter-State Fair, defeating among others the stallion Dragon that won first prize at the International, at which show he didn't show distinctly. The stallion Dragon was also owned by us.

This is the two year old stallion that won first prize at the World's Fair, Milan, Italy, last summer.

This is the Belgian stallion, "Cosaque de Courcelles," that won first prize as a two year old at the World's Fair, St. Louis, two years ago.

This four year old Belgian won first prize as a two year old in the two year old class at St. Louis.

Member: What are the prices of these horses?

Mr. McLaughlin: These horses range in price from about \$2,000 to \$4,000. The highest priced one is the one in the middle.

Prof. Boss: I would say for the benefit of the audience that these horses are kindly loaned by us by McLaughlin brothers, who have a stable at Minnesota Transfer. We are not able to purchase the horses we would like to have at the college, but as long as they stay there it will not be necessary for whenever we need horses for class work, Mr. McLaughlin says to telephone down, and they will send them up, and that is the kind of support we get from them. It is very valuable to our college. (Applause).

Prof. Boss: If you will just take the horses around the ring a few times now, and keep this little black horse so we can show him.

Dean Liggett: We will have a few remarks now by our Senator, J. M. Hackney. You want to know why I say, "Our Senator?" Senator Hackney represents this district as the successor of the late Gov. McGill, who was a faithful friend of this college, and we have reason to believe that Senator Hackney will be as loyal as Gov. McGill. Senator Hackney. (Applause).

ADDRESS**BY SENATOR J. M. HACKNEY.**

Mr. Chairman, Ladies and Gentlemen: I am very glad of having this opportunity to speak for the first time to the students and friends of the Agricultural College of Minnesota. I have been away down south recuperating of late, and while I was there I was reading occasionally in the St. Paul Dispatch, and among other things I read about the Agricultural College students refusing to violate their constitutional right. (Great applause).

When Professor Boss sent word to me that he wanted me to address you tonight, he didn't give me any particular subject. I don't know whether he wants me to ask you how you voted or not. (Applause and laughter).

When I started on my trip south my wife said to me, "You have been pretty busy for some years at your business and you haven't been able to do much reading, and I would advise you during your stay in the south to read up a little." Now I am just like any other married man, I always take my wife's advice. (Laughter).

When I reached my destination, instead of taking a vacation, I commenced to read up a little so as to comply with her advice, and some of the things I read about, I want to present for your consideration tonight. You will pardon me if I read the larger portion of what I have to say, because of the fact that it contains so many statistics and figures that it would be impossible for me to speak without referring to this paper.

Until we learn to think in billions we cannot measure the meaning of the development of the United States during the last quarter of a century; much less can we grasp the potentialities which the coming years have in store for us. Our progress, however, has only been the pioneering work of clearing the wilderness, of ploughing and planting amid the stumps which mark the new land of the settler. Not yet have we had time to pull the stumps and drain the swamps. What we have been doing is like sowing by hand and gathering our harvest with the old sickle as compared with what we are now preparing to do. In our pioneering work we have had to disregard permanency to meet the immediate needs of the hour. We have had to make haste even though it meant some waste. However, like the pioneer who built his rude log hut and tilled the stump-ridden soil into increasing gains, made possible the building of a better home and the clearing of his land in order to utilize labor-saving implements, we had to pursue similar methods in our national development until now, when we have entered upon a period where scientific farming will take the place of old soil-destroying farming and where scientific skill in manufacturing will mean changes as radical as those which mark the difference in farming methods.

All that we have done in this work of upbuilding has been the perfectly logical working out of conditions which have surrounded us, conditions which in no wise need give us any concern nor for a moment be considered as pessimistic in their tendency. Under the old conditions it was just as much the natural order of events for the western farmer to work his prairie soil

and the southern planter his cotton land in a way to get the largest immediate results. Nothing else than what we have done in this way could have been expected by anyone who looked at these things from any other than a superficial point of view. Now a point has been reached where it can be seen that all that has gone before is but the preparation for the real work of national growth,—growth in agriculture, in manufacturing, in stock raising, in mining, and in all the other varied business interests of the country.

In studying the advancement of the United States one is amazed at the marvelous progress of the last quarter of a century. Even ten years ago the heart of man could never have conceived the magnitude of the development of today. But looking at this in the light of the world-wide revolution in business now in progress, considering our unique geographical position midway between Europe and Asia and the vastness of our resources beyond the power of man to describe, and bearing in mind the forces which today are making for the intensest human activities ever known, it will be realized that the achievements of the past, compared with what the future has in store for us, are but as the gentle shower of an April day in comparison with the mighty down-pour of the summer rain.

THE FARMER COMING INTO HIS OWN.

When the construction of railroads, built largely through the aid of land grants, opened to settlement the extensive prairies of the west, agriculture was pushed more rapidly than the industrial advance of the country justified. With the rush of thousands of foreign immigrants to that section and the movement from the east, there was brought about an increase in agricultural products, especially in wheat and corn and live stock, in advance of the growth of other industries. Even without immigration cotton production was for a time in advance of the world's requirements. The inevitable result was a serious decline in the price of farm products. Not until industrial growth had made great advance, increasing the proportion of consumers to the number of farm producers, was there any decided improvement in the financial condition of farmers as a class. Within the last ten years a change as wonderful as that which has marked the progress of manufactures has come about. In its far-reaching effect upon the continued prosperity of the country, it deserves more attention than it has received. The value of all farm property and the number of people engaged in agriculture at different periods, beginning with 1870 and running to 1905, is as follows:

VALUE OF ALL FARM PROPERTY IN THE UNITED STATES.

		No. of people en-
	Value.	gaged in agriculture.
1870	\$8,900,000,000	5,992,000
1880	12,180,000,000	7,713,000
1890	16,082,000,000	8,565,000
1900	20,439,000,000	10,438,000
1905	26,570,000,000	*11,500,000

*Estimated.

VALUE OF ALL FARM PROPERTY.

The value of farm products in the census years beginning with 1870 up to 1900, and in 1905 and 1906, was as follows:

VALUE OF FARM PRODUCTS.

1870	\$1,958,000,000
1880	2,212,000,000
1890	2,466,000,000
1900	4,717,000,000
1905	6,415,000,000
1906	(Estimated) 7,000,000,000

The striking fact in this latter table is the small increase in the value of farm products between 1870 and 1890, and the enormous increase since 1890. In the former period there was a gain of but little over \$500,000,000 in the annual value of farm output, while between 1890 and 1900 the gain was over four and a half times as great, or \$2,250,000,000. The value of the farm products of 1900 was largely more than double that of 1880, though the increase during that period in the number of people engaged in agriculture was only 35 per cent. Remarkable as was this gain, it is since 1900, however, that the improvements in agricultural conditions has been almost startling in its extent. Between that year with a total value of \$4,717,000,000 and 1905 there was a gain of \$1,700,000,000. The value of the farm products of 1906 is about \$7,000,000,000, or, say \$500,000,000 more than for the preceding year.

VAST INCREMENT OF FARM WEALTH.

Starting in 1870 with a production per capita of the entire population of \$50, there was a rapid decrease to \$39 as the average for 1890, and from that a steady advance to \$61 in 1900, to \$77 in 1905, and to about \$82 in 1906.

VALUE OF AGRICULTURAL PRODUCTS PER CAPITA OF ENTIRE POPULATION.

Beginning in 1870 with \$326 as the average value per capita, there was a decline to \$286 per capita in 1880, with \$287, in 1890. From that point the gain was very marked, rising to \$451 in 1900, to \$558 in 1905, and probably to nearly \$600 in 1906, or more than twice as much as the per capita of 1890. The effect of this is shown in the increase in every part of the United States in the value of farm lands.

For every man, woman and child engaged in farm work, the average value of farm property, which was \$1,579 in 1880, has now increased to about \$2,300. The magnitude of the actual increase of \$6,100,000,000 in the value of farm property between 1900 and 1905 is made clear by saying that it is more than seven times as much as the total national bank capitol of the United States, and is equal to one-half of the aggregate deposits in all the national, State, private and savings banks and all the loan and trust companies in the whole country. Surely the American farmer is coming into his own, and in doing so is enriching the country.

THE NEW ERA OF SCIENTIFIC FARMING.

Contrast this striking exhibit of the prosperity which has come to the farmers of the country with the poverty of ten or fifteen years ago, and in doing so bear in mind that this is only the beginning of what we may expect in farm life. In passing through the pioneer period of skimming the cream of our most fertile soil we carried our farm production beyond what could be profitably consumed by this country or for which a profitable market could be found in Europe. Now, enormous industrial growth with its millions of consumers, added to European requirements, has reversed the conditions. We have reached a time of improved methods in farming and of restoration of fertility to the soil. Much is heard about the increase in the fertilizer trade of the country,—and the development of this industry has been commensurate with that of other large business interests, but the real improvements of farming is found more largely in better methods of handling the soil. Scientists are teaching farmers here and there, and from them others are learning, how to rejuvenate and rebuild their land by the use of alfalfa and other crops. They are learning how to diversify their products. Increasing wealth and the gain in population are creating an almost unlimited market for the diversified crops. The orchard, the truck-garden, the dairy, are all yielding their fair share of wealth, and helping materially to swell these great totals of agricultural output and increase in farm values.

WHAT IRRIGATION IS DOING FOR THE COUNTRY.

Moreover, as a people we are learning the value of irrigation. In the arid regions of the West, aided by the national government, millions are being expended in the reclamation of millions of acres of land destined to furnish homes for millions of prosperous farmers. In the semi-arid regions the same good work is going on, as well as in sections where rainfall is abundant but irregular. As we have learned to flood the dry land to the enrichment of the whole country, so we are beginning to learn how to drain the overflowed lands where nature has given a soil of almost unequaled fertility, but which has heretofore been unavailable. Many million acres of swamp land in northern Minnesota and other states will in the future be reclaimed. To the country this will yield even a larger profit than can be produced from the irrigation work now under way throughout the west, valuable as that is.

IMPROVING OUR WATERWAYS.

Connected with this drainage work, and in some sections of the country really a part of it, is the improvement of our rivers and harbors. Beggarly is the only word to describe the treatment by the national government of American rivers and harbors. The total amount expended in this cause from 1820 to 1906 was \$470,000,000, the average amount for the last ten years being less than \$20,000,000 annually. Contrast this with what other countries have done. Holland, with 2,000 miles of navigable waterways, against over 43,000 miles in the United States, not including any streams of the seaboard, has expended about \$1,500,000,000 upon this work, while

France, with 4,000 miles of navigable waters, or about one-tenth of what we have, has expended over \$1,000,000,000, or more than twice as much as the United States. It is said that there has been expended upon the harbor of Liverpool alone, \$200,000,000. France has spent upon the harbor of Havre, \$35,000,000, and other countries have kept pace, realizing the importance of rivers and harbors not only in the development of business, but in the regulation of freight rates. Even Mexico and South America have in many cases far exceeded us in the broadness with which they have regarded river and harbor improvements. We are only beginning to grasp what it will mean to properly improve our rivers.

THE GROWTH OF AMERICAN RAILROADS.

It is a wonderful story, one that stirs the imagination, as we study the figures which tell of what American railroads have done, and yet in the recent inquiry into the cause of car shortage we learn that there seems to be no prospect that our railroads for many years to come will be able to keep pace with the expansion of industry and commerce. There is a demand for cars and locomotives and new track far beyond what we have today or what it seems possible for us to secure in the near future. Moreover, expansion of traffic grows more rapidly than railroad facilities. Though we may have temporary ups and downs in business, every new burst of activity will far exceed the preceding one, just as the expansion of trade today is far ahead of that of 1900 to 1902, when some thought we were on the very topmost wave of prosperity.

From 1904 to 1905 there was a gain of nearly 14,000,000,000 mile tons of freight, while for the preceding four years the average annual increase was only 8,000,000,000 mile tons. The figures for 1906 will doubtless show a still greater advance. The growth of our railroads since 1830, when we had but twenty-three miles in the country, is illustrated in the following table:

	Miles.
1830	23
1840	2,810
1850	9,021
1860	30,626
1870	52,922
1880	93,267
1890	166,703
1900	194,262
1905	217,350
1906	(Estimated) 223,000

RAILROAD MILEAGE.

What a story of activity and the broadening of human life is shown by these figures of railroad development. During the lifetime of many who are still active factors in business affairs, where seventy-six years ago, we had twenty-three miles of railroads, today 223,000 miles, or including double track and sidings, 313,000 miles.

The freight in mile tons has grown from 39,000,000,000 in 1882 and 79,000,000,000 in 1890, to 187,000,000,000 in 1905, the total for the latter year

being more than twice as great as for 1890. The gain of 46,000,000,000 tons between 1900 and 1905 was very much larger than the total of 1882, and nearly two-thirds as great as the total of 1890.

TAKING CARE OF FUTURE POPULATIONS.

To a population of about 85,000,000 we shall add during the next ten years 20,000,000 or over, giving us in 1916, a total of about 105,000,000, and by 1926, or twenty years hence, 130,000,000. In 1931, or twenty-five years from now, our population will be about 145,000,000. By 1936, or thirty years hence, we will have in the United States, not counting our insular possessions, about 155,000,000 people, or double our total population of 1900. Looking forward forty-three years to the middle of this century, and the boys and the younger men of today will be active business men of that period, we must count upon a population of 200,000,000. As business grows so much more rapidly than population, as the output of nearly all manufactured and agricultural products increases at an ever-accelerating rate, and as modern machinery and inventions make possible the doubling and quadrupling of man's working capacity, it is not unreasonable to say that the 200,000,000 people of 1950 should exceed in potentiality what 400,000,000 could accomplish today. Have we room for such a population without overcrowding? Can we accommodate these vast numbers and still find ample land for the farmer and natural resources sufficient for the worker in iron and steel and other industries?

In area the United States covers 3,000,000 square miles, with an average of less than twenty-six persons to the mile. Settled as densely as France, we could accommodate 570,000,000 people; as densely as Great Britain and Ireland, we would have over 1,000,000,000 people.

Ohio has 102 people to the square mile. On the basis of Ohio's average the United States would have over 300,000,000. So great is the extent of our agricultural land that with the continued improvement in farming methods now going on, with the reclamation of our overflowed lands, and the extension of irrigation in regions formerly regarded as forever doomed to the cactus and sage brush, with the development of scientific forestry, too long neglected, but still capable of saving our timber reserves and protecting the sources of our rivers, we can so build up our farming interests as to provide an ample food supply for as great a multitude as the future seems sure to give us.

With resources for the creation of industries, the development of mining, the extension of railroads, and the enlargement of trade and commerce at home and abroad, we are abundantly blessed. Nature has lavished her riches upon this country as upon no other, as far as human knowledge has yet discovered.

The labor no longer tramps the streets searching for employment at starvation wages, as a million or more did ten years ago. The employer is everywhere looking for the laborer with far more business offering to him than he can find the laborers to handle. From the smallest farm all the way through every field of human employment in industrial affairs to the construction of the Panama Canal, the greatest undertaking of modern times, the scarcity of laborers is the universal cry. Increasing wages, on a scale never seen before, marked the closing months of 1906.

With prosperity on the farm, with prosperity in the factory and in railroad operations, with prosperity for the mechanic and the day laborer, there is being developed out of the changed conditions in the world's business affairs, a more well-rounded prosperity than any of which history gives us a record. The progress of the last quarter of a century is merely the beginning of our real broad national advancement, and what we have wrought in that period will be doubled, and in many things, quadrupled, during the next twenty-five years. A conception of the possibilities which are ahead of us should quicken the lifeblood and stir the pulse of every man whose horizon is broadened as he looks out upon the world's mighty activities.

Senator Hackney: I have been reading to you something about the greatness of the United States, and that which will apply to the United States applies to this great state of Minnesota. Minnesota has several great resources, but today, unfortunately, she stands with but one great resource. The shame of Minnesota lies at the door of this responsibility for the destroying of our forest reserves in the northern part of our state. Our resources in timber are gone. The shame of Minnesota also lies at the feet of those responsible for the giving away of our millions and millions of tons of iron ore, the greatest resource that God ever gave to any state in any country; so today we stand in Minnesota with only one, but the greatest of all resources, our agricultural resources.

For the past ten years Minnesota has virtually been at a standstill, caused largely by the emigration of our men, our settlers and our farmers, into Canada. Now I have nothing against Canada. It is perfectly proper for her to come here and get our people if she can get them. We are to blame for allowing our people to go there. I have nothing against Canada taking our settlers, but we should first settle our own quarrels. It seems to me that this institution, of which you are a part, is doing the greatest work of any educational institution in this state, in teaching scientific methods of farming and making the men and boys farmers of Minnesota. (Applause.) We must develop the state lands, we must develop the soil of Minnesota.

This department is not reaching into the uttermost parts of Minnesota. It cannot do so. I have no doubt that only a small percentage of the farmers of Minnesota send their boys to this place, and I dare say they come from only a radius of a few miles of this institution, and I want to present this to you tonight. I have had it in mind for only a short time, but I presume some of you have had it in mind for years. There should be branches of this institution established throughout different parts of the state. Districts say of three or four counties, should have one experimental station,—experimental farm. I wouldn't attempt to place in every county in Minnesota an expensive plant, but say 160 acres in every county of Minnesota, on which could be built a fair sized building and a plant that would be in harmony with the farmers of that county; so that the work going on in this institution might be carried right into that county, and the men and boys of that county could come in touch with the knowledge disseminated by this institution. (Applause.)

I beg your pardon for taking so much of your time. I would like to go farther, but think I have said enough. I congratulate you on being able to attend these meetings. I am thankful I can be here tonight, and I assure you all of this institution, and the friends of this institution, that as long

as I remain in the legislature of Minnesota, it will always give me pleasure to do anything in my power to help in the development of this institution. (Applause.)

Dean Liggett: We next will have music by the orchestra.

Music by the school orchestra.

Dean Liggett: Dr. Curryer will now talk to us awhile on standard bred saddle horses.

Dr. Curryer: Dean Liggett, and ladies and gentlemen: I know you are tired, and what I am going to say to you, I am going to make just as short as I know how. They have given me about ten or twelve minutes to say what I ought to take an hour for, but I want to just call your attention to a horse that has been bred right and handled right, an educated horse. The breeding of this horse is for saddle purposes, and all that intensity of breeding and selection,—and I won't say but what there is some in-breeding, and I won't say but what there was a particular purpose,—for the easy carriage of the rider. There is no other horse that I know of that has the perfect ease on its feet that the American saddle horse has. He can go a number of different paces, and do the work easy: and that is not all,—if he is handled properly he will carry his rider about as easy as a cradle.

There are a number of things that go to make up this horse: the compactness, denseness, elasticity, intelligence, good looks, and the best of disposition. Everybody can see that here is a horse that he would naturally like himself. One man says he is not big enough. That is owing to what you want to use him for. If you want to use him for a big work horse, that is not the horse; but it would take the big work horse to do the work this horse is doing now.

Now look at that matter of quality. There is a whole lot said about quality. Everybody talks quality. What is it? Now I have my definition as well as every other one, and it says that "fine goods are always put up in small packages." I will admit this horse isn't as big as the other one, but I will bet you his flesh is just as firm, and that the texture of the bones in that horse will be finer than in any of the big ones. You examine the bones of this horse; if we would take one of those bones tomorrow and cut it in two, you would find that it is as dense as ivory. It is said that size is a measure of power, all other things being equal, but you can take the bones of some of these large horses and you will find them so porous that you can just blow a candle right out through them. Here is a horse well along in years, although not too far along for this purpose, but look how clean his legs. I want to call your attention to just one thing about this horse, and it must be applied to all easy riding horses, and that is the spring of his pastern. You notice that every step that horse takes, you will find that spring in the pastern. Every step you see that spring down. Now move him along a little faster. (Rider increases the speed of the horse about the ring.) You see that spring increase; just notice every step, how he comes down. Those are all the springs the horse has. That spring of the pastern carries the horse's body with the least jar, and also the rider. The first thing I look at is the spring of the pastern. If it don't spring, I wouldn't buy him as a saddle horse, because if it didn't spring I would know he would jar the life out of me. (Laughter and applause.)

Now that applies to all horses. When you find a horse standing up straight on his pastern, then watch him move, and if he don't spring down at every step, you may know he is going to go sore; he cannot help it. That

spring of the pastern is to the horse what the springs of your buggy are: if they are long and light, they will carry you easily. If they are stiff and unyielding, you are going to get jarred. If you are riding a lumber wagon, you will get jarred. (Laughter and applause.) That is just the same with horses.

Now as to the road horses and the saddle bred horses. These are creations largely of man. The selection of the road horse and that of the trotter are two things, and our best road horses are generally from the standard bred trotters or the horses kept for trotting purposes. They are animals that were not a success as race horses. The great road horses,—and there is a man older than I am right here, whose business has been such, that I am satisfied he can verify what I am going to say,—and that is, the road horse that travels day in and day out, week in and week out, year in and year out for a term of years, is the horse that goes close to the ground, the horse that slips along and does the work with his legs, and not beating the air with his feet. (Applause.)

Now that is Dr. Wedge: I know, I have ridden many miles watching the action of his horses. The horse that steps high, gets jarred, and if he doesn't have lots of spring in his pasture, will necessarily get sore. Now you watch that horse's movements, and see how easy they all are, every one of them. (Horse is trotted around the ring.) You see when he moves he moves right forward. You see he goes close to the ground there, but you can see that every move is one of elasticity. Now if you will ride up here and stop, I want to call the attention of this audience to the head of the horse. The head is the main feature of the horse, just as the face is the main feature of a man. In the horse it is the whole head: You get an outline of this horse's head from a side view. You will notice his head is nearly straight from here down, with a little depression there; but notice the fullness of this part. Notice another thing,—the length from the base of the eye here up to this point; by taking the distance from here up, you get the measure of the depth of the brain. The bottom of the eye here is the floor of the brain. You notice the width of his brain, and the depth of it; with that shape of head and will have a horse with wonderful brain power. He shows it in his nervous force, and his good sense, and everything connected with him,—a horse that you can trust. He has been properly handled,—no question but what that horse has. You see the brightness of that eye, the fullness of it; the activity of the ear is the best indication of the responsiveness of that horse to his rider. That horse is in sympathy with his rider, and I tell you the man on the horse has a great deal to do with the horse's action, and the horse depends largely on the man on his back as to what he does.

Now if you will send him along at a little livelier gait to show us how he will come. (Horse is trotted briskly about the ring.)

The carriage of both ends of that horse is about as perfect as you can get it. Now what a shame it would be to cut that horse's tail off, wouldn't it? (Laughter and applause.)

You see what nerve force there is to that without apparent exertion. There that will do, I just wanted to show his action: and you all notice the spring of his pastern, no doubt, and his movement forward is easy.

Now if anybody has a question to ask.

Member: How old is the horse?

Dr. Curryer: I think he is 14 or 15 years old,—and he is only a colt. (Laughter.)

Who owns him?

Dr. Curryer: Mr. W. G. Carling of St. Paul: standard registered saddle horse. The saddle horses are to my judgment one of the best class of horses we have. The foundation is back to the thorough-bred and the pacer and the trained saddle horse bred for half a century. Kentucky and Missouri have more well-trained saddle horses perhaps than any of the other states. If you want a good saddle horse you can get him from Missouri or Kentucky or Tennessee.

That horse is bare-footed, going perfectly natural; no weight to show style or anything of that kind. A good riding horse. You take the Danmarks and they are a good class of work horses, that is especially road horses; they are big enough and strong enough, and well quartered enough, to do almost any kind of work, and they have plenty of body, heavy quarters, well let down. They are strong and good. In proportion to that horse's height he is a very stout horse: and although he is not a large horse, you will find that that horse will carry a man right up good and strong. Thank you ladies and gentlemen.

Dean Liggett: Now we are going to have something interesting in the way of a talk by Professor Shaw. I take great pleasure in introducing to you Professor Shaw, who will now address you. (Applause.)

Prof. Shaw: Mr. Chairman, Ladies and Gentlemen; and Students of the School of Agriculture: There are gentlemen here today who have listened to talks for eight hours, almost without interruption. Now I know you will agree with me when I say that human nature can only stand so much, and I know you must be saturated with what you have heard.

I want to thank Col. Liggett for inviting me to address you at this time. I count it a privilege to be permitted to stand before this audience, but I do think, ladies and gentlemen, in justice to you, that I should not say anything to you tonight, other than to ask you to excuse me from giving my address at this time. There is something else to come before you, and it would keep you too late to talk to you, and so with this apology, I will make way for what comes next.

Dean Liggett: Ladies and gentlemen, just a moment: Instead of the Committee on Credentials meeting here immediately after the adjournment of this meeting, as I announced before, it will be the Committee on Resolutions, and the Committee on Credentials will meet in Minneapolis at the City Hall, at 8:30 o'clock tomorrow morning. Immediately after this meeting therefore, the Committee on Resolutions will meet here, and I hope you will meet promptly. This Committee on Resolutions is for the Agricultural Society,—not the Live Stock Association, but the Resolutions Committee of the Agricultural Society.

There is one other announcement to make,—the Auditing Committee of the Breeders' Association are requested to meet at 9 o'clock tomorrow morning, if possible, at the City Hall, in Minneapolis: that is, Mr. Crandall, Mr. Avery and Mr. Martin: 9 o'clock tomorrow morning.

I might announce at this time also that the business meeting of the State Agricultural Society will be held in the City Hall, Minneapolis, tomorrow forenoon, and the business meeting of the Breeders' Association will be held in the same place tomorrow afternoon.

Music by the School orchestra.

Dean Liggett: Professor Gaumnitz will now tell you a little about this team of coach horses on exhibition.

Prof. Gaumnitz: Ladies and Gentlemen: The time is getting very short. I am sure all of you are getting tired; not tired looking at the horses, but just getting tired physically, and I will only take a few minutes to talk something about what use is made of these horses,—coachers and carriage horses, and also something regarding their type.

Coach horses are not as good for draft purposes; you have seen the large, massive horse, designed especially for doing work. You also have seen the light saddlers, which are designed especially for moving with ease. We have something here to come between the two; something that has some power, a great deal of action and a limited amount of speed. In some carriage horses of course we find a great deal of speed, and these horses before you have a great deal of speed, but coach horses of a design especially for drawing heavy coaches and heavy carriages at a moderate speed, often display at the same time a great deal of style: such horses are used by wealthy people on their coaches and carriages, and may be seen driving through the parks. They are sometimes called track horses, or heavy harness horses, and as they go through the parks or along the drives they appear in no particular hurry; the horses move along with ease, and at the same time attract the attention of everyone by their extreme action. Coach horses are high steppers. Carriage horses usually step high. Those that bring the highest prices in the markets display the greatest knee and hock action; move along in a very small space, and it is sometimes said they travel in a bushel basket. So you see it is the style and the gracefulness that we are after when we are selecting coach and carriage horses, rather than speed or extreme strength.

You all know in the make-up of these animals that they are built in the back much the same as other horses, but note the extreme length, and the slopiness of the shoulders, together with the clean limbs, the well sprung pasterns and the closely set hock. Note also at the other end the crup is set level, which promotes the great ease in the motion of the hind legs, and as they go back and forth you will notice they move very easily. You enjoy seeing them move, they do it so easily and you cannot help but admire them, and that is just why people use them for that purpose.

I think that is all I have to say. If you will just move them a little more, and then we will then after that have Senator J. M. Hackney tell us something of the prizes these horses have won, and I will also ask Mr. McLaughlin to tell us some of the prizes that have been won by that French coach horse. Now if you will just move them about and draw them up here, we will have these prizes announced. Now you were told a little while ago about the saddle horse. You will notice how graceful these horses are; how they pick up their feet. Now I do not say that because the highest price is paid for the best actors, that it is the wisest thing to purchase that kind, but people have established the high prices for them on account of the attention they attract.

Member: Is it an advantage to cut off their tails?

Mr. Gaumnitz: Well coach horses generally carry their tails so high that it suits some people better to have their tails docked.

Now if Senator Hackney will tell us about the prizes.

Senator Hackney: These horses were purchased in Chicago by me about eight months ago and matched up. This one on this side has been sick. They never entered into competition except at one horse show, the horse show held here on the Fair Ground last fall. At that time this horse

wasn't in very good shape, but we succeeded in taking first prize competing with Twin City horses tandem. They also won second prize as they stand now, and also second prize with the mare on the near side hitched to this rig single. They also took several second and third prizes in the park classes.

Mr. Gaumnitz: Mr. McLaughlin will now tell us about the prizes won by these French coach horses.

Mr. McLaughlin: This French coach stallion "Distingue," won first prize and the reserve championship at the International. He was entered in the races in France last year and in one of the races he established a record of 2:26. He is a trotting bred French coach stallion.

Dean Liggett: The exhibition and exercises of this convention of the Live Stock Breeders' Association will come to a close at this time, and I would request any of the old people or ladies to remain in the building for a time, and we will send you to the car line: if we cannot take you in one load, we will take you in several loads.

Adjournment.

ADDRESS BY PRESIDENT C. N. COSGROVE.

Members of the Agricultural Society and Visitors:

It is not of the fairs of the past I would speak, but of those of the future. Those of the past decade have made a phenomenal growth, and to the press of the state both city and country, I would ascribe much of the credit; they having at all times given liberal support, and influence toward its success; and to the railroads entering the twin cities much credit is also due, as they at all times have furnished good service and plenty of cars, but of the street cars, I cannot say so much. I feel sure it is putting it low to say the growth of the fair would have been 25 per cent greater if we had had anything like adequate street car service. The attitude of the street car management is, to a man from the country (like myself), like the way of the heathen Chinese, "past finding out."

At the present moment they are spending hundreds of thousands of dollars building a "Modern Coney Island" at Lake Minnetonka, and after its completion will spend several thousand dollars per week for amusements; and all this for the nickels they may get for carrying passengers back and forth. But right at their door is an institution which last year brought them in at least \$40,000 direct fare, to say nothing of twice as much indirect, all in ten days, and without one cent extra outlay on their part, and yet we have labored for years in vain to have them light their terminals, and put up a shed under which people could stand in case of rain, the probable expense of which would have been approximately \$5,000; but no, they seemingly go on the principle of the man who said, "What is my wife's is mine, and what is mine is my own," and leave one hundred thousand people per day to have their pockets picked at night, or to be drenched to the skin in case of a chance shower.

To be sure they did, (after the new shops on Snelling avenue required it) put in the cross line on Snelling, which has been some relief, but I am informed by a competent street car man, that even the effectiveness of this would be multiplied by ten were there more cars added, and all run around the loop instead of as now being switched back and forth on the main line.

In fact the lack of street car facilities seems to me to be the only stumbling block in the way of the much talked of exposition in 1908.

The Governor in 1905, by request of the legislature, appointed a commission to report at the coming session, some plan of properly celebrating the fiftieth anniversary of Minnesota's statehood. I understand that such commission will appear before this body during this session and I bespeak for them your careful attention and consideration, because, gentlemen, I consider it one of the most important matters to come before the legislature this winter; one that ought not to be put off till the last of the session, but be taken up early so that whatever is done toward getting the exposition started, may be done at once, as the time is short at the best.

As I said before, one of the greatest drawbacks that I can see is the lack of street car accommodations; but as the aim of the exposition management would no doubt be for forty good days, rather than for four or five overloaded days, this matter might be made to adjust itself. Seventy-five thousand people per day, (and we can handle that number quite comfortably) would bring three million people during the six weeks which would be about the attendance hoped for.

In its issue of December 26, last, the St. Paul Dispatch editorially said: "The proposed celebration of the fiftieth anniversary of the state is not a matter of sentiment, but one of business which ought to appeal to every enterprising citizen. A Minnesota object lesson can and should be placed before the whole world, which would bear fruit in pecuniary returns a thousand fold.

"No one can assume that these important things can be accomplished without expending money, but if judiciously handled it can be done not only without increasing taxation but absolutely by reducing it. If the investment of one hundred dollars would insure the return of five hundred dollars, the most prudent business man would consider it the part of wisdom to invest the one hundred dollars. It is from this broad-minded standard that the legislature should consider these important questions, rising above petty local jealousies and looking for the greater good for the greater number in the years to come."

Now, I endorse all this, and go further as I believe a six weeks exposition can be put on and ultimately not cost the state one cent even outside the value in advertising and increase in population. In other words, let the state advance one and one-half million dollars, or even one million dollars, and your exposition receipts will not only pay running expenses, but say 25 per cent of the original outlay, all of which would be in the way of permanent improvements about as follows:

80 acres of land and fencing same.....	\$50,000
Sewer cost	30,000
Electric connections	30,000
Foot bridge over tracks.....	15,000
Agricultural building	75,000
Landscaping grounds, shrubbery plants, etc.....	50,000
Poultry building	50,000
Dairy hall	50,000
Main building	400,000
Grand stand	250,000

The present agricultural and horticultural building could then be used exclusively for horticulture; the present main building for a woman's building, and the present poultry, dairy, and woman's buildings, for restaurants and other privileges.

To many of you, the foregoing estimates may seem large, and some of them perhaps unnecessary, but after giving this matter careful consideration for months (and in fact years), I think the foregoing very conservative. If this work could be done immediately and the fair managers required to cover into the state treasury all the surplus over running expenses from

year to year, it would be but a few years until every dollar of the money was paid back, even without the receipts of an exposition, and the fair grounds be suitably equipped for many years to come.

The advantages of such a plan are, I think, too patent to require any explanation. As a matter of fact, we are running on a hand to mouth system which is not only poor economy but dangerous as well. Some day a fire may sweep the grounds with great loss of life as well as property, whereas the buildings heretofore mentioned being of fireproof construction, would each help to keep the fire from the more combustible buildings now on the grounds.

The erection of these buildings would require some two years. A goodly number could be completed this year ready for the 1907 fair and the balance for the 1908 exposition. In the meantime, our U. S. senators and members of congress could no doubt get the government to erect a building at a cost of \$100,000 to \$150,000 and make their usual exhibit at the exposition from the Smithsonian Institute, the National Museum, Library of Congress, the U. S. treasury, and Post Office department, (and thus give our citizens a chance to learn of the wonderful growth of our government which 99 per cent of them would never otherwise have) and then donate their building to the state at the close of the exposition.

Other adjoining states can no doubt be induced to erect buildings, part of which would be left on the grounds and could be bought for a nominal sum, or better still might be occupied by these states from year to year.

Now if the legislature would only see this as those do who have been right in the work for the past eighteen or twenty years, there would be no trouble in getting the appropriation. The fair is the only self-supporting institution in the state and not only that, but it is now clearing about \$75,000 per year, or 25 per cent on the amount the state has invested, or 15 per cent on the total present valuation.

With proper equipment and buildings not being in constant need of repairs, this amount ought to be doubled and you can readily figure it would not take long to refund the entire million to the state.

I think a six weeks exposition could be made to net \$50,000 to \$75,000 per week, and this amount would be a big start toward refunding the price advanced for the buildings and additional ground.

Bear in mind all the time that none of this money is to be spent on temporary work, as was most of the outlay at Chicago, Charleston, Buffalo, Omaha, St. Louis and Portland, and is now at Jamestown and Seattle. Not only was a large part of their money expended in erecting temporary staff buildings, but it took a large per cent of their gate receipts to tear down these staff buildings and return the site to original conditions, whereas with us, all would be permanent improvements long since needed.

The \$400,000 main building may seem large to many of you, but it could be filled many times any year at the state fair, and for that matter another just like it. In fact there would be enough of carriage and stove exhibits alone to fill the building, hence none need think we are building too large. The \$250,000 addition to the grand stand is something long needed. As you all know, the grand stand is practically the only great money maker we have. With this addition it would bring in \$75,000 to \$100,000 per week, 50 per cent of which would be net profit.

As to the needs and results of the exposition, opinions will of course vary: some may think that expositions have been overdone, which to an ex-

tent may be so, but bear in mind the nearest we have ever had are Omaha and Chicago and that but a small per cent of the citizens of our state, the Dakotas and Montana, attended those. And many new features could be added which no other exposition has been able to have, such as races, (both harness and saddle) base and foot ball, in fact athletic sports of all kinds, and it seems to me we could draw most of the old exposition attendance as well as much new.

Of course we would have our regular horticultural, agricultural and live stock exhibits, during this exposition, and with an exposition we could secure a low rate from the railroads covering all parts of the U. S. which it is impossible to do with a state fair, and this low rate would, I believe, bring a larger crowd from outside the state than we have ever had, even during Grand Army week, and a great advantage would be that when they came here we would have everything in shape to show them the resources and products of the state and the world as well.

In fact the more you think of the exposition plan the more it grows on you. Not only could we show to the outside world our resources, but to our own inhabitants a great array of foreign exhibits, which perhaps not one in ten thousand would otherwise have the opportunity of seeing.

At the present moment our opportunity of securing a fine exhibit from foreign countries is exceptional, as at Jamestown an exposition is now being put up, whose foreign exhibits, next to the military and naval displays, will be their main feature, and no doubt the management of your exposition could get the greater part of those exhibits to move right up here; the more easily so as they would then be right in line to go to the Seattle exposition in 1909.

Never before was there an opportunity to get a circuit of expositions and at such a great distance from each other that would in no way interfere with the other, and of course each would have its own peculiar main features; that of the naval and military display at Jamestown, the mineral and forestry at Seattle, the agricultural and mineral in Minnesota.

Speaking of the Seattle exposition, would say that a committee went out in Seattle and raised one-half million dollars in one-half day. Their aim is to raise several million in the city and state.

They as well as Jamestown, are laboring under the same difficulties as that of expositions heretofore held; that everything is of a temporary nature and consequently a dead loss save for the gate receipts.

Outside of this, compare our chances of financial success with either of those two cities. Jamestown, a city of less than 3,000, in a county of less than forty thousand, its nearest cities of any size being Richmond, of 100,000 some fifty miles away, and Norfolk, one-half that size, forty miles away, and on one side of these cities is a country a large portion of whose inhabitants are negroes and not a fair-going people, and on the other side is the Atlantic ocean.

Seattle too, is a city little more than one-third the size of Minneapolis. In front of it is the Pacific ocean, and back of it is a sparsely settled mountainous country.

Compare this with our location, in practically the center of the United States, from east to west, Canada to the north, and the Mississippi valley to the south, and 750,000 people in one hour's ride.

Some there are I know, who will think the twin cities should give a liberal donation, and indeed it would be fine could they see their way clear,

each to erect a large building in which to exhibit the goods of their own manufacturers and merchants. But I know they have troubles of their own: what with Auditoriums, Y. M. C. A.'s, packing plants, Capitol approaches, etc., they have their hands full; then, too, this is not a city proposition, but a state one, and one which if properly conducted, not curtailed or gotten up on too niggardly a plan, will enhance the value of every acre of land in the state, many times the tax, even if not a dollar was turned back into the treasury, and would result in bringing thousands of settlers into our state to occupy the hundreds of thousands of acres of land, lying north of the twin cities, and most of which can still be bought at a nominal price, and which is much more productive than the land which people are going several hundreds of miles further north to secure at a greater cost, besides being obliged to live in a foreign country.

Now, gentlemen, you may wonder what we as an agricultural society have to do with this matter; simply this, because the farmers are more interested in this proposition than any other class of people, and you represent the farmers, and the delegates here can say whether we can have a properly equipped fair ground, as well as whether or no we shall properly celebrate our half centennial. Let every man here appoint himself a committee of one to see the senator and member of legislature from his county, tell him that we as farmers, the back-bone of the country, want it and must have it, and we will get it.

See them often, not only once but continually, until they feel toward you as did the little girl toward her dog. She had been told that God was watching her wherever she went, and being a mischievous child, this idea was not an agreeable one. One day when she started down the street her little dog followed her. She requested him to go home several times without effect. At last she turned on him with the remark, "You go home, it's bad enough to have God tagging me everywhere without you too."

We need not fear that the cities will go back on us, even if they do not see immediate results. They know full well, that without us farmers there would be no twin cities, and at the same time we too, must bear in mind that without the cities there would be no hundred dollar an acre land in Minnesota. In fact, we live one on the other, and must help one another live. All pull together and let the world know what we who have lived here for the past twenty to thirty years have learned full well, namely that we have one of the greatest states in the Union, not only in producing iron, lumber, butter, wheat and corn, and that too without irrigation, but first-class citizens as well, and we have a climate in which it is a joy to live forever with no fear of earthquakes, or tidal waves to wipe us off the face of the earth.

Gentlemen, I think you for your attention, and hope to meet you all at the exposition in 1908.

This address has brought forth the most favorable comment on all sides. It is considered a step in keeping with the spirit of the times and is heartily endorsed on all sides. The election of officers of the state society for 1907 was a mere matter of form. Vice President Nelson was in the chair. Mr. Cosgrove was again elected without a dissenting vote, every man in the room, delegates and others, rising to their feet to endorse him. After the election, when called to the chair, Mr. Nelson said: "President Cosgrove, I congratulate the State of Minnesota on your election and the Minnesota State Agricultural Society on securing your services."

The exposition proposition will rest with the legislature, but the fair of 1907 is on. There is no change in officers and there will be no change in the fair except that it will be larger and better than ever, and an humble unassuming citizen of Le Sueur will remain at its head. Well can Le Sueur and Le Sueur county afford to be proud of President C. N. Cosgrove of the Minnesota State Agricultural Society, for the sixth time president without a single opposition vote.

Pres. Cosgrove: Gentlemen, I thank you for your attention, and I hope to meet you all at the exposition in 1908. (Applause.)

Music by the orchestra.

Mr. Nelson: Ladies and gentlemen, the next business in order is the report of your Secretary, E. W. Randall.

Sec'y. Randall: Gentlemen and members of the State Agricultural Society: The secretary's report is a good deal of a formality, and I do not believe I will displease any of you if I shorten it considerably.

This report is published. The copy will be sent to the printer as soon as the stenographers have time to write out the proceedings of these meetings. After being printed, a copy will be mailed to each one accorded as a delegate at these meetings. Others can secure a copy by sending a postal card request for it, so that if by next spring you do not receive a copy of this report, and you care for one, send in a postal card request and it will be immediately mailed to you. This published report will contain in addition to the full proceedings of these meetings, a report of each department of the Fair, and these I think you will find interesting. The work in each department will be outlined, the character of the exhibits, the name and address of those to whom awards are made, with the number and amounts of premiums, recommendations for the future by the superintendents, etc. As in other years, an expert is in charge of each department, giving its affairs personal attention.

The Treasurer, Mr. Wilcox, is unable to be present. An officer of the bank of Northfield with which he is connected is in the East attending the funeral of his mother; this makes it impossible for Mr. Wilcox to leave the bank at this time, and he requests that I read his report as well as my own. Under those circumstances I have combined the two, and have endeavored to make them brief.

(For report of secretary and treasurer, see opening pages of this book.)

Mr. Nelson: Ladies and gentlemen: The next thing on the programme would be the report of the Credentials Committee, but I see before me the chairman of the Semi-Centennial Commission, appointed by the Governor, and I know you would all like to hear from him, and I now have the pleasure of presenting to you Mr. Joseph Mannix. (Applause.)

ADDRESS BY MR. MANNIX.

President Nelson, ladies and gentlemen: I fear that an attempt of an old time newspaper writer and police reporter to come before an audience of this kind and address people interested in the subject of agriculture, is going to embarrass the aforesaid reporter. I am pleased exceedingly with this opportunity of meeting so many intelligent and discriminating Minnesotans who are engaged in what to my notion, as a city man and old newspaper man, and as a man who has been privileged somewhat in the direction of traveling and observing somewhat as to conditions in this and other hemispheres, I want to say right at the outset, that I appreciate thoroughly, and possibly more thoroughly and more fully than the average city man, the beauty and the grandeur and the splendid character of the work in which you folks, ladies and gentlemen, are especially concerned and interested.

However, that is not the proposition upon which I am here to talk. As your presiding officer, and as your worthy president, and perhaps as other officers who have addressed you, have mentioned, his excellency, the two times governor of Minnesota, appointed at the instance of the legislature, a commission composed of five men, and I regret that the five gentlemen are not here. Mayor Cullom has just returned from a visit in the east,—Mayor Cullom of Duluth; Captain Whitney of Marshall, Lyon county, is ill; Assemblyman F. B. Lynch, a most excellent and useful member, happens to be engaged so that he cannot be here, and I don't know whether my colleague, Dr. C. H. Kohler, is present—

A voice: He is here.

Mr. Mannix: I am glad to know it. Your president has referred to this matter to a considerable extent here this morning. This commission was appointed by the governor at the instance of the legislature, for the purpose of devising a scheme for a proper and fitting celebration of the semi-centennial of Minnesota,—to get up a commemorative celebration to take the form of an exposition, of whatever character it would finally assume,—something that would properly and fittingly celebrate that important event in the history of our grand, splendid, noble, growing, expanding and very, very promising commonwealth.

As you all know, Minnesota was admitted to the grand Union of States in 1858, therefore, next year, the year of our Lord 1908, we will have a chance to commemorate that splendid event.

Now the commission has held a number of meetings and discussed this matter with local St. Paul, Minneapolis and Duluth bodies. We have had several conferences with members of your society, and from the very inception of the idea your officers have given the commission every encouragement,—splendid, grand encouragement, and if we have received any inspiration at all it has been from that source. It does not require much canvassing or much inquiry to ascertain that there exists a very pronounced sentiment in favor of some sort of celebration, and the difficulty is going to be to determine the character of that celebration. Much depends, of course, as you know, upon the attitude, as to the disposition made of this very important proposition, of our friends the solons at St. Paul. If they can be awakened to a full and proper conception of the feeling that exists,

that Minnesota as a great big, strong, growing, prosperous, vigorous state, financially and otherwise, should have a thoroughly dignified and respectable celebration, and one that will command the attention not only of the immediate northwest,—that territory that has a population of perhaps ten millions of people, but of the whole country, and perhaps of the whole world: if our friends at St. Paul, I say, can be aroused to a proper conception of the importance of this occasion, not only from the standpoint of patriotism, not only as a matter of sentiment, of delightful, grand, inspiring sentiment, but as a matter of common, every day American business enterprise, as a matter of much needed advertising to the state, and in my humble judgment we have been very backward in this important thing of advertising our resources, our worth and our prospects,—then this subject will be treated as it should.

Now very early in our deliberations, friends, it was proposed, and the thought struck the commission as being an excellent one, that if there was an exposition, or anything big in the way of a celebration of this semi-centennial, that it ought to take place at your fair grounds,—they being nicely and accessibly located. It is practically the only place for such a celebration.

Now, as I say, up to date the thing is somewhat chaotic. The commission will get together I hope within a week or so, and there exchange views after each one of the five members shall have quite digested such facts as he has come into possession of during the past six or seven months, or since the governor appointed us. Now I do not think there is any use in my detaining you long. Early in our deliberations we received from your worthy and enterprising secretary, from whom you have just heard delightful facts, a communication to the effect that the officers of the society believed, one and all, in the idea of a celebration, and believed, as I have said, that the proper place for that celebration was at your grounds. It was a somewhat general statement, and in that letter he says: I don't know but what I will read it to you so that you may know just what was said:

"The proposed Semi-Centennial Exposition in Minnesota for 1908 seems to appeal to all of the people of the state. Minnesota is a great state, and its fiftieth birthday should be fittingly celebrated. An exposition will record the wonderful development of the past fifty years, and give visible promise of the state's golden future. It will be beneficial and inspiring to have our varied products and inexhaustible resources displayed in proper form before the people of the country at large and of the world.

The state fair grounds, located midway between St. Paul and Minneapolis, and easily accessible by both steam and electric railways, is an ideal location for such an exhibition. The equipment is insufficient, but can be increased and adapted to new conditions as may be desired. If an exposition, commensurate with the importance of the occasion, is carried out, at least eighty acres more of land will be needed; also a sewer system and a power and light plant, as well as, at least, one new exhibition building of large dimensions. These improvements and additions should be permanently made, as all of them will be needed for future state fairs, the popularity and utility of which have been clearly demonstrated.

Should the people of the state, through the legislature of next winter, decide that the proposed exposition shall be held, and make the provision for it, I am sure each officer and member of the Minnesota State Agricultural

Society will find pleasure in doing a full share of the work needed to carry on the important undertaking to a successful conclusion."

And that, ladies and gentlemen, furnished practically the key to the idea of the commission's working along the line of having this exposition or fair, or celebration, pulled off, as we say, at Midway. That is one proposition upon which the five members of our commission are absolutely agreed: as to just what we will report to the governor or to the legislature, as to the amount we shall ask for as an appropriation, as to just what sort of a celebration we will outline, or as to who shall manage the exposition end of what you might call the state fair of 1908,—are things that remain still quite undetermined. We hope to have this report ready for his excellency and for the legislature before the close of the present month. Now the St. Paul Commercial Club and other bodies, got together and appointed representatives that made up a general committee; this general committee deliberated over the matter and presented a statement to the commission, and they, knowing what Mr. Randall had suggested, went on record as favoring the Midway for the fair or exposition, and making many very excellent and helpful suggestions; that report, coming from that committee that represented a number of St. Paul bodies of importance commercially and otherwise, friends, was presented by Judge Willis and was of much assistance to the commission.

The commission has also received this very interesting, although possibly too brief communication, from that excellent Missourian, that enterprising and brainy man, to whose suggestions and ability the St. Louis Exposition owes so much of its success, David R. Francis.

In the course of his letter to the commission, Mr. Francis says: (This letter is dated December 3rd, 1906.)

"At the Trans-Mississippi Congress two weeks ago, in Kansas City, the committee on resolutions reported and the congress unanimously adopted the following upon the subject of expositions:"

This being absolutely, and nicely and harmoniously in line with the proposition we are dealing with.

"In order to promote the friendly rivalry of states in progress and development, we favor state celebrations, marking the fiftieth and hundredth anniversaries of the admission of each state into the Union, and when such celebrations are held, we recommend that on each occasion the National Government take part, giving an exhibition of national progress and development."

That is the resolution passed at that splendid representative body described as the "Trans-Mississippi Congress." Mr. Francis further says:

"I introduce this to show you that we are in hearty sympathy with the project you mention in your letter, namely the celebration of Minnesota's semi-centennial anniversary as a state.

"I think you are wise in emphasizing historical, educational and patriotic features. I send by mail a copy of our publication relating to special events. We found these events very popular and drawing. The Indian Congress, the military features, the conventions of various kinds and the music should, in my opinion, be strongly emphasized.

"The general government, as indicated in the resolution copied, ought to participate by the encampment of troops, by drills, dress parades and in similar ways. The money which this participation by the government may cost, will be well expended. We have in our great western country many

thousands of people who have never seen Washington, and who may never see what the government is doing for the people. These thousands can be reached better through the expositions than in any other manner. I believe it is the duty of the government to participate, having in view the dissemination of information as to government functions among the people of the west.

"Beginning seasonably you ought to bring to your exposition or anniversary celebration many conventions and annual gatherings. The arrangement of dates should be undertaken early in the coming year, as most organizations will set the time and place for their 1908 conventions at their assemblages in 1907. I shall be pleased to furnish you any assistance that is within my power." And other encouraging words. "Yours very truly, D. R. Francis."

These expressions, kindly, encouraging, patriotic, come from a man whom you all appreciate is thoroughly informed upon this great subject of expositions.

Here is a communication from Mr. Reed, another experienced man,—Henry E. Reed, who is director of what is described as the division of exploitation, of what promises to be a thoroughly nice, strong, forceful and attractive fair, namely, the Alsaka-Yukon-Pacific Exposition, which is to be held in that enterprising city of Seattle, one year after our time. So in the matter of dates, friends, Minnesota's Exposition is coming in very timely and nice. The Jamestown Exposition, that is going to be a thoroughly nice thing, is to be held this year about four and one-half months; then Minnesota comes in a year later, and Seattle a year after that. The Seattle people indicate, through this letter, and through other mediums, very great interest in our proposition, and say they will come to the front at all times and under every circumstance, and furnish every possible encouragement, moral and otherwise, to make Minnesota's celebration what they think it ought to be. I think I will ask Dr. Kohler later on to read that.

Now you have listened unquestionably with attention and respect to the well-thought-over and well-digested suggestions of President Cosgrove. His report is here. I view it for the first time. I observe his recommendations, or rather his suggestions in regard to the exposition, and more particularly in regard to what is needed in the fair grounds. It seems to me that any Minnesotan, however little interest he might have taken in the splendid annual fairs that you gentlemen are responsible for, or however little he may know of the officers of your organization, it seems to me that any member of our legislature or any citizen of our state, ought to fully endorse the following reasonable suggestions:

First, that we, as spirited and patriotic citizens of the state of Minnesota, ought not to allow the coming year of 1908 to pass without celebrating it in notable fashion.

Second, that the state fair ground is absolutely the place and the only place for the celebration.

Third, That Minnesota is known as the state that holds each year the strongest and most vigorous state fair in the Union.

Fourth, That the conditions, at least so far as grounds and buildings are concerned, down there at Midway, are absolutely insufficient even for the state fair, growing as it will grow with each succeeding year, as we hope and as we believe, and

Fifth, That it is only reasonable to ask the state to loan,—and I think that is the way in which President Cosgrove places it,—to loan to the Agricultural Society money in sufficient amount to put things in good shape there.

I feel it honestly and absolutely, that if the state legislature deals with this matter properly and intelligently, and in a business-like way, allowing sentiment of course to enter into it to some extent, but dealing with it as a business proposition, and if the right sort of exposition is pulled off, attracting the attention of the whole country, and practically the whole commercial and industrial world, that later on, grand as your fairs have been, that this event of a year from now would add very materially to the reputation and the strength of your annual fairs, and that everything that might be done through the medium of a liberal appropriation by the legislature in the way of adding to your facilities by the putting up of a splendid and enduring monument in the shape of a memorial building, putting up a dairy building, a separate horticultural building, adding perhaps 60 to 80 acres of land to your grounds, land that can now be secured for a price small indeed, gentlemen, as compared with what you would be able to secure it for ten or fifteen years from now: adding very materially to the grand stand and fixing it so that further instances of Christian gentlemen selling 35,000 seats on the grand stand and being able to accommodate but 50 per cent of those people, will not be continued hereafter.

Now it seems to me, just looking at it as a plain citizen, not interested at all in your society, further than the well meaning and well-disposed Minnesotan should be interested in it,—it seems to me that these suggestions ought to strike the average member of our legislature favorably.

I see that Mr. Lynch of St. Paul has arrived, and I want you to hear him. He is a man who in a matter of cold and unsentimental business affairs, will double discount yours truly. I also want you to hear, if you please, from Dr. Kohler, and I am glad they are both here.

There are many phases of this subject to be discussed, and I am sure you all appreciate the importance of it, and that there is no need of myself and my friends apologizing for taking up 10 or 15 minutes upon a matter which may, and I hope may assume tremendous dimensions and importance. There is much information I have here, folks, that I will not present. I will simply suggest this: I hope before you adjourn finally you will go on record in a plain matter of fact, unmistakable fashion, through the medium of a resolution or a memorial, or a set of resolutions favoring an appropriation and such action as will best secure the success of this movement. I may just further suggest that you use whatever influence you have with your member of the legislature, whether he be senator or representative.

And now thanking you for your extreme courtesy and attention, I would suggest to our friend, Benjamin Nelson, that he call on Mr. Lynch, and then I think perhaps it would be well if Dr. Kohler would read what Mr. Reed says as to the Yukon Exposition. I thank you. (Applause.)

Mr. Nelson: I take it for granted that the audience would be glad to hear from Mr. Lynch, and I will now invite him to the platform.

(Mr. Lynch advances to the platform.)

Mr. Nelson: Ladies and gentlemen, I have the pleasure of presenting to you Mr. Lynch of St. Paul.

REMARKS BY MR. LYNCH.

Mr. Chairman, ladies and gentlemen: I think I have been taken at an unfair disadvantage here. I didn't come in expecting to make any remarks upon the subject. Mr. Mannix telephoned me night before last and asked me to come up to this meeting, and that Governor Johnson and he had arranged to address you. The governor is unable to be here; the legislature is in session and he had a couple of important committee meetings to attend this morning. I was asked by him to present his apologies to you for his absence, and to say that he hoped at some time in the future to be able to talk to you.

Mr. Mannix has had a great deal more to do with the Semi-Centennial Celebration than any of the other members of the committee. He knows more about it than the rest of us. It was his idea. He is the father of it, and it is out of place for me to talk on the subject. I can only say that the cities of St. Paul and Minneapolis are willing to do their share. It is not a plan to boom them or boost them. It is for the state at large. They can only prosper as the state prospers.

Speaking of St. Paul more especially, and in connection with the fair ground proposition: before any new buildings can be put up, as I believe Mr. Cosgrove knows, it is necessary to have proper sewers. It will cost St. Paul something like \$250,000 to do its share of that work. The common council have arranged for that money. You will have the sewers.

A voice: Good. (Applause.)

Mr. Lynch (continuing): The state at large needs advertising. We have a good state. There isn't any better in the Union, but in the last four or five years something like fifty thousand people have gone to Canada, and in the last two years I think double that number have gone to Texas. During the past year North Dakota has gained more in population than Minnesota. In fact Minnesota has nearly stood still. It pays to advertise, and there is no better advertising than the Semi-Centennial Exposition.

Anyone who was in Georgia a few years ago, before the Cotton State Exposition was held in Atlanta, could see the depression that existed there. Farm lands were worth next to nothing. The exposition at Atlanta brought northern people down there, interested them in the south, and I think it safe to say that the value of farm lands in Georgia have increased four-fold in the last ten years. We cannot expect the value of Minnesota lands to increase four-fold; they are too good already, but they ought to be higher, and we ought to have more people. I believe the exposition will help us along that line, and speaking to the point, it is the cheapest form of advertising the state can do. From nothing else will you get the same indirect advertising, and that is the kind that pays; if you can get people to talk about you, you have accomplished the first step toward getting them interested in your state. I believe this will accomplish that result. (Applause.)

Mr. Nelson: We will now hear from Dr. Kohler. I now have the pleasure of presenting to you Dr. Kohler.

REMARKS BY DR. KOHLER.

Mr. Chairman, ladies and gentlemen: It is not necessary for me to take up very much of your time, because Mr. Mannix has gone over the matter very thoroughly and exhaustively. I am only going to touch on one or two points that I think require especial emphasis, and that Mr. Mannix did not elaborate on quite as much as he ought to have.

Now in regard to the sentiment of Minneapolis and St. Paul. There is no question about what they feel that they want to do and ought to do. There may be some question as to what the state outside feels as though they would like to do themselves, or encourage the members of the legislature to do, and I believe that this meeting, representing, as it does, so very largely the country districts of our state, can be of a great deal of service to us if they feel that they can, and desire to co-operate heartily with us in this exposition idea.

The cities have a direct gain you may say; the people on the outside may look upon it that Minneapolis and St. Paul have something directly to gain aside from the general use and purpose of the exposition, and there may be a feeling throughout the state that we are to benefit so much more largely than you are that it would be more a part of our duty and work to see that this thing meets with the success and co-operation that it should, but as Mr. Lynch stated just a moment ago, there is very much more to this than merely the benefits that Minneapolis and St. Paul may derive from it, from the fact that Minnesota has been neglecting herself in the matter of advertising to a very considerable extent in the last few years.

I was very much surprised during the last few days in looking over the census to note the population of the different towns throughout the state. A number of years ago I lived at Glencoe, an enterprising village out about 50 miles from here, and just beyond is another very enterprising village of Hutchinson. Glencoe had a population of 2,200 and maintained that population for a number of years with a gradual increase. Hutchinson being a smaller town when I began to live in that part of the country, owing to its getting the C. M. & St. P. Ry. for a time gained in population much more rapidly than Glencoe until it attained a population about ten years ago of 2,428, but since that time it has made no increase at all, and the census report of 1905 showed a population of 2,424, or an actual loss of 4 in population. Now the natural increase, had the town continued in a flourishing condition, would have amounted to 200 to 300, and the fact that it did not maintain that increase was due to the people having moved from that section to some other section of the country, and as I happened to know in this particular instance, they have gone to Washington or other places of that kind. Now what you find at Hutchinson, you find in other parts of Minnesota, and I think even more largely in southern Minnesota than in any other part of the state.

As Mr. Lynch says, we have hundreds of acres of land in Minnesota that we could make use of if we would only encourage this idea of advertising our state, and the people outside of Minneapolis and St. Paul would receive just as much and more benefit than we ourselves, and the thought I wish to emphasize is that any of you living outside of these two particular centers, if you have any influence with your legislators, it seems to me that it would be the wisest thing in the world to use it. All the members of your

-districts need in the legislature is the feeling, the idea that they have the encouragement and the sympathy of the men who live in their districts, and if they have that, then there won't be any question about getting the appropriation that we have got to have to make this thing a success.

Now the latest exposition we have had of any particular value to us is the Lewis & Clark Exposition, which closed only a short time ago in Portland. In that exposition,—I will just take from this letter the things of importance. The total receipts for the entire length of time that that was open were \$1,500,000; a little over; approximately \$1,600,000. The total disbursements, including a dividend of \$80,000 to the stockholders, were \$1,511,000.

The state of Oregon appropriated \$450,000. Of this amount \$50,000 was for a memorial building which was not built. The total expenditure of the state was therefore \$400,000. Portland furnished the capitalization of the controlling corporation, which was \$417,000. No direct appropriation was made by the city as such act is prohibited by the constitution of Oregon.

"The most attractive features, as near as we could determine, were the forestry building, which was made of logs, and the art exhibit, which was the finest ever assembled on the Pacific coast. I do not think there was any feature that we could have dispensed with.

"We did not have a permanent Indian feature, although Indians took part in some of the sham battles.

"In regard to the length of time which your show should last, will say that that is a matter that must be determined by local conditions, with which you are more familiar than I am. I am disposed to think that such a celebration as you have in mind, might better be compressed into an exposition of from four to six weeks rather than a longer one.

"The area of the Lewis & Clark grounds was 406 acres, of which 220 acres was natural lake, and 186 acres land.

"The population that we drew from was five million, living within a radius of 1,000 miles from Portland.

"Our paid attendance was nearly 1,600,000 during the exposition.

"If we were to hold the Lewis and Clark Exposition over again, we would introduce such new features as would be of greatest interest to the people at the time the exposition was being held."

Now in this instance the state of Oregon appropriated \$450,000. The general idea is that every cent of money appropriated by the state in a matter of this kind, is gone and gone for all time to come, but the fact of the matter is that the Portland Exposition, or what is known as the Lewis and Clark Exposition, by actual figures paid a profit of so much of the money as was expended by the state of Oregon and the city of Portland, that the money expended by them was paid back to the city and the state.

Now if Minnesota expends money here, it will be spent for something not for a month or six weeks,—that is a mistaken idea, and the very fact that Minnesota, through the state fair management, will actually be spending money that will be a source of profit to the state in years to come, is something you will not believe unless you look into the actual reports of other expositions, and then only would you realize, as Mr. Mannix says, that the state of Minnesota is only loaning to the state fair board the amount of money to make this thing a success.

One other thing of importance is that to a great many people possibly to the members of the legislature, the amount that it will be necessary to appropriate, will seem to them pretty large, and one of the most important things for us to do, is to impress upon their minds that the only way to make this thing a successful and a paying venture, is to have an appropriation that is large enough to finance the enterprise as it ought to be financed. If we have got to get along on a small appropriation, and do things in a half-hearted way, I don't believe we will make half the success that we would if we had what money we need, and if we do have all the money we want, I do not believe there is any question in the world that in five or ten years, Minnesota will have more money in her treasury as a result of the undertaking, than the whole appropriation will amount to.

Now the only thing of interest in this letter besides the fact that it was a money making venture is the fact that they felt after they had their exposition that if they had made some local features of more importance than the general features that they would perhaps have made the exposition more of a success than as it resulted. They suggest to us that in our efforts to do anything, we make the things of local interest of additional importance, and if we do so, we have the advantage over them in the fact that they had about five million of people to draw from within a radius of one thousand miles, and the reason why we can make our exposition of more interest from a local standpoint is because we have possibly eight million people within a radius of five hundred miles from Minneapolis, and with that many people to draw from, all having practically the same interest at stake, interested in the same amusements and with the same ideas, we ought at least to double the success of the Portland Exposition, especially when we take into consideration the fact that we will not have more than two-thirds of the expense that they had, they having had a long exposition, most of the time with a small attendance and our idea being to have a short exposition and keep the attendance up to the highest mark.

The only thing I want to say in conclusion is, that if you have any influence with the men who represent your district in the senate or in the house, encourage them in the idea that they have the support of the people of the state of Minnesota in this matter, of making any appropriation that they feel they need to make, after understanding the position, as they will, when it is presented by the commission, you will have won for yourself and the state of Minnesota, something I think you will not regret. I thank you very much. (Applause.)

Mr. Orr: Mr. Chairman, can we have a few minutes to devote to the discussion of this question?

Mr. Nelson: Yes, Mr. Orr.

Mr. Orr: I have just a few suggestions I want to make, which, it seems to me, will add to the interest of this movement and will be likely to create sympathy for it, and be more likely perhaps to influence the legislators somewhat,—that is in addition to what has already been said, which perhaps, and I hope, is quite enough. I would like to see Minnesota take a new departure entirely in the plan of this exposition. The exposition is all right, I am in favor of that, but I would like to see some feature there begun, which would be of permanent historical value, that would live and grow and increase from year to year.

As President Cosgrove said "A \$400,000 main building over there," it occurred to me that that building should be devoted to this purpose,—the inauguration of a permanent historical museum. It is time now, and we must not delay any longer; in fact if we are ever to have a museum of that kind, we must not delay the opening of the beginning of it very much longer, or the material that is accessible now to go into that museum will not be obtainable. There should be a building there large and permanent. It should be built so as to outlast the centuries. We should begin now to place in that building those things that typify the growth of Minnesota from its early pioneer days down to the present time. There should be the Indian tepee. There should be the figure of the Indians dressed as they were there. There should be preserved the implements the Indians used in their household, hunting and other appliances. There should be the Red River cart, and the stuffed oxen who drew it. There should be all of those things; the miniature buildings of the pioneers of the state. The household utensils within those buildings; the early agricultural implements of the state, and then there should be shown the growth, the change and the development of those things down to this time. Pictures made and enlarged, of the early times of the state and in these cities.

These things should be made the nucleus of what is subsequently to become a great historical museum of the state. Think, if you please, of the value of a building of that kind, equipped in that way, to those who are to celebrate the one hundredth anniversary of Minnesota. Then they will go on and increase and add to these objects of historical interest, so that when the second centennial of Minnesota is celebrated, there will be something of rare value, something absolutely priceless, that will not be disposed of under any consideration whatever.

Our people go to Europe and spend millions of money every year, and when we get there the chief things we want to see, and those things which are most interesting and instructive to us, are the old museums which we can go through. They appeal to the eye. You can learn more of the early history of the country in those museums in a few hours than you could by reading history for a month. There are the miniature homes of those people who lived in the 13th and 14th centuries; the household implements, the furniture and the arrangement of them,—the thousand and one things you see there,—their early implements, as we can now show the early implements of our state.

I think if this commission will take this matter into consideration, and think of the permanent benefit that will grow out of it, that it will appeal to them as a worthy project. Think of making that fair ground a great permanent institution there for the amusement and education of the people, not only those who are now living, but for those who will come after us, even down to remote generations. Let us have something analogous, if you please, to Kensington or Earl's Court in London, or the two combined,—museum and permanent exposition,—they are centres of attraction that attract people from all parts of the world.

Many people go there to see these great centres, and they are greater objects of interest than any other portions of the city. We have the opportunity of starting something of that kind now. I believe if you will appeal to the people,—if this commission will say to the people "Here is something that we propose to do: we do not propose to make this exposition a temporary affair, or that every portion of it that pertains to this occasion of

the celebration of the semi-centennial of the state, is to be wiped off the face of the earth within a few weeks after the exposition is over. Here is something that is going to remain with us, of utility and value from this time on clear down to the last syllable of recorded time if you please."

This, Mr. President, is simply a suggestion I have thrown out. I have thought of it a great deal, and I think if the rest of you think of it, it will appeal to you as it has to me, and if you have some feature of this kind: something new; some departure from the ordinary or the conventional exposition of the time, that it will meet with favor everywhere. I know of no state in the Union,—that is another reason why I would like to see Minnesota take the advance in this,—I know of no other state in the Union that has inaugurated a movement of this kind. We might pick up some little things like old Plymouth in Massachusetts: they have preserved the relics of the Pilgrim Fathers, and they are priceless things, those are, and you cannot help but feel that those Pilgrim Fathers were real people,—not persons of fiction as we are inclined to think they are; when you go there and see the pots they boiled their beans in, and the cradles they rocked their babies in; the interest they have for the visitor is indescribable. Let us have something like that in Minnesota; let us incorporate a feature of that kind in our semi-centennial celebration of the admission of Minnesota into the Union.

Mr. Hazzard: I would like to thank Mr. Orr for that speech, and to say to him that this matter has already been considered in part, and we are glad to have this thought before this commission. Many of the Minnesota territorial pioneers have taken action along this line and said that something like this must be done. I have the first scythe that cut the first grain in Washington county. We have the first plow manufactured over on the Island in 1854. Since I have been in this room a fine looking young farmer came up to me and said "I have brought you an old shovel, over fifty years old." The Minnesota Pioneers, over 3,000 strong, and 3,000 more to join them, as near as I can guess, that arrived here before May 11th, 1858, propose to lead this van in the handsome thing for that year.

Mr. Nelson: We are very much indebted to Mr. Orr and others for the remarks they have made. The next business in order is one that is somewhat sad. There is a Reaper whose name is Death who is gathering in his precious harvest all of the time, and among others he has gathered two of our most distinguished members of the State Agricultural Society, and it is only fitting and proper that suitable resolutions should be presented and adopted by this meeting. We have a committee appointed for that purpose, of whom Mr. Frank Randall is chairman. We will now ask for the report of the committee on these resolutions.

Mr. Frank Randall: Mr. Chairman, ladies and gentlemen: Your committee reports as follows:

Whereas the members of the Minnesota State Agricultural Society have learned with unfeigned regret and sorrow of the death, in California, January 9th, 1907, of John Cooper of St. Cloud, who for ten years served as a director of this society, besides serving as its president from 1898 to 1902 and,

Whereas, he had been from territorial days one of the prominent and substantial citizens of Minnesota, always doing his full share in the labors incident to the formative period of a great commonwealth and maintaining consistently and constantly a character marked by most unusual loyalty to friends and fidelity to principle and by the broad charity which reaches the needy, and aids them to aid themselves, and,

Whereas, his completed career as citizen, soldier and friend commends itself to the best of men, and leaves nothing to be regretted:

Resolved,—That in his passing, we recognize his merits, and the value of his example, and extend our sympathy to his family and neighbors, and those who being nearest to him shall miss him the most:

Resolved that these resolutions be entered in full upon the records of this society, and that a copy be sent by the secretary to his afflicted widow.

FRANK L. RANDALL,

WM. E. LEE,

J. R. MORLEY,

Committee.

Jan. 10, 1907, Minneapolis, Minn.

Whereas, In the death of Heman W. Stone, Sr., which occurred at Morris, Minn., Aug. 22, 1906, the state of Minnesota lost one of its best citizens and the Minnesota State Agricultural Society one of its best friends.

Mr. Stone was a native of Canada, came to Minnesota about 1856 and settled at Jordan. He lived at Belle Plaine and Le Sueur and in 1876 removed to Morris where he was engaged in farming and milling. He served in the Minnesota legislature and has held other public positions all of which he filled with distinguished credit and ability.

He was identified with the State Agricultural Society from its beginning and much of its success is due to his efforts.

When it was small and poor and struggling against adverse circumstances Mr. Stone never lost faith in the ultimate triumph over all obstacles and insisted that it would in time meet the success that appears now to have been reached.

Therefore, Be it Resolved,—That this Society extends its condolence to the family of our deceased fellow member, whose loss falls so heavily on them, and,

Resolved further, That as a token of our esteem and respect these resolutions be spread upon our official minutes and a copy thereof delivered to the surviving members of the family.

Minneapolis, Minn., Jan. 10, 1907.

FRANK RANDALL,

WM. E. LEE,

J. R. MORLEY,

Committee.

Member: On behalf of this society, I move the adoption of these resolutions.

The motion was then adopted by a rising vote of the members of the society present.

Mr. Nelson: Our next business in order is the report of our committee on credentials. Mr. Canfield, I believe is the chairman of that committee.

Mr. Canfield then read the report of the committee on credentials as follows:

Aitkin County—C. N. Howe, F. P. McQuillan, F. M. Shook.
Anoka County—Geo. W. Swark, C. G. Richardson, L. H. Hoyt, Frank Hart, (State Fair).
Brown County—F. Crowe, A. F. Burneister.
Blue Earth County—E. T. Champlin, T. F. Mills, Geo. W. Norman.
Carlton County—Thomas Spencer 3
Carver County—J. J. Farrell, R. J. Neunsinger, Frank Bachmeyer.
Chippewa County—W. R. Pearson, J. R. Burnit, F. E. Bently.
Chisago County—C. M. Johnson, 3.
Dakota County—J. B. Kelly, W. L. Parker, P. H. Feely.
Dodge County—Geo. N. Sorum, Geo. B. Healey, M. G. Smith.
Faribault County—J. F. Barnes, 3.
Fillmore County—J. C. Mills, Maj. W. A. Hotchkiss, Thomas J. Meighen.
Freeborn County—D. K. Stacy, 3.
Grant County—R. P. Wells, T. C. Hodgson, N. Hillman.
Goodhue County—E. S. Person, M. H. Boskfield.
Houston County—H. J. Blexrud, E. C. Helliekson.
Itasca County—A. J. McGuire, 3.
Isanti County—J. A. Stonebery, W. H. Dunbar.
Kanabec County—C. C. Rogers, Willis Fairbanks.
Kandyohi County—Hon. A. E. Rice, (State Fair), E. C. Wellin, O. R. Berkness.
Lac qui Parle County—P. G. Jacobson, O. J. Bly, Wm. Kitzinger.
Le Sueur County—J. H. Termath, J. L. O'Connell, M. W. Grimes.
McLeod County—L. P. Harrington, S. G. Anderson.
Martin County—S. S. Knox, Edw. F. Wade.
Meeker County—Oscar E. Linquist, D. E. Murphy, E. E. McGrew, (Dassell St. Fair).
Mower County—J. J. Furlong, H. W. Lightly, A. W. Edson.
Nicollet County—John Hurst, 3.
Pope County—Peter Peterson.
Renville County—Chas. Kenning, Wm. Wolff, Nick Leach.
Red Lake County—John Morgan, L. M. Hoag.
Rice County—D. J. Ferguson, J. W. Alexander, Emil J. Gull.
Rock County—C. E. Older, (Appt. Co. Coms).
Sibley County—J. W. Stark, 3.
Stearns County—Frank L. Randall, John Coates, Spencer Hunt, (State Fair).
Steele County—Robt. Crickmore, J. R. Morley, T. E. Cashman.
Stevens County—C. B. Randall, R. J. Hall, E. J. Jones.
Swift County—S. H. Johnson, E. D. Olson.
Shakopee State Fair—H. P. Marx, M. A. Deutsch, John Gentgen, Jr.
Todd County—W. E. Lee, 3.
Wabasha County—T. G. Bolton, Geo. H. Dickman, H. K. Oliverson.
Waseca County—Michael Sheeran, Henry Reineke, Thomas Modden.
Wright County—J. A. McVeety, G. G. Luhinan, R. W. Holbrook.
Yellow Medicine County—Frank E. Millard, M. S. Nelson.
Minnesota Forestry Association—S. M. Owen, A. W. Latham.

Minnesota Bee-Keepers Association—W. R. Ansell, W. H. Lantz, H. V. Poore.

Minneapolis Market Gardeners' Association—F. M. Libby, M. B. Turner, H. Dahmers.

Minnesota Swine Breeders' Association—J. J. Furlong, A. J. Lasby, John Timpane.

Minnesota Sheep Breeders' Association—G. W. Baird, Thos. Kough, C. W. Glotfelten.

Minnesota Horticultural Society—S. B. Green, R. A. Wright, F. H. Nutter.

Minnesota Dairymen's Association—J. R. Morley, 2, Robt. Crickmore.

Minnesota Fanciers Association—J. E. Brown, 3.

Minnesota Field Crop Breeders' Association—

Rose Society—Mrs. H. B. Tillotson, Mrs. F. H. Gibbs, Chas. Rixon.

State Live Stock Breeders' Association—Andrew Boss, C. S. Crandall, T. H. Canfield.

St. Paul Growers' Association—J. V. Bailey, F. C. Schlely, G. F. Anderson.

Minnesota State Agricultural Society—C. M. Griggs, B. F. Nelson, E. W. Randall, F. J. Wilcox, W. M. Liggett, Wm. E. Lee, D. S. Hall, G. W. Patterson, J. M. Underwood, L. D. Baird.

Life Members—J. G. Bass, N. P. Clarke, Wyman Elliott, Geo. R. Finch, John Nerie, J. H. Baker, G. W. Baird, Lorenzo Hoyt, John Kerwin, S. Madigan, Wm. Osgood, M. K. Hunt, Adam Bohland, H. E. Hoard, G. H. Hazzard, C. N. Cosgrove, E. D. Childs, W. M. Liggett, J. C. Fleischer, C. D. O'Brien, L. H. Prosser, P. C. Schuvan, M. C. Tuttle, W. Rosencranz, Henry Schneider, D. Ramaley, G. W. Sherwood, M. Tousley, Ed. Weaver, Thos. Shaw, O. C. Gregg, A. H. Bullis, W. A. Miller, T. L. De Lancey, J. J. McCardy, H. S. Fairchild, J. H. Letson, A. T. Stebbins, S. P. Childs, J. J. Furlong, Geo. H. Partridge, Thos. H. Shelvin, Hugh Frazier, M. T. Grattan, J. W. Boxell, C. N. Bell, Geo. Bowers, Clarke Chambers, W. T. Cross, D. M. Clough, Sam Deering, A. P. Hendrickson, Frank Holmes, R. C. Judson, Dr. C. F. Konantz, Chas. LeMard, W. L. McGrath, W. R. Merriam, C. McReeve.

THOMAS CANFIELD,
N. K. HUNT,
E. T. CHAMPLIN,
H. W. LIGHTLEY,
Committee.

Mr. Nelson: You have heard the report of the committee on credentials. What will you do with it?

Mr. Curryer, Jr.: If it is in order, I would ask that the delegation from Pine county be seated.

Mr. Canfield: There seem to be no credentials here.

Mr. Nelson: There have been no credentials submitted from that county.

Mr. Curryer, Jr.: They have had delegates here every year.

Mr. Nelson: Have you your credentials with you?

Mr. Curryer, Jr.: No, sir. What I want to know is if a delegation could be seated here without credentials?

Dr. J. C. Curryer: Mr. President, the whole object, as I understand it, is that the county fairs shall be represented. Now in the case of Pine county, they have their fair association, and I understand they held a fair, but they are not represented. My son, the young man that just spoke, happens to be from that county, and is interested in that work, and seeing the omission is no doubt the reason of his making that fact known. Now it is for this society to say whether they shall be admitted.

Member: I move the adoption of the committee's report on the delegates as read.

The motion was duly seconded and upon being put was carried and the report adopted as read.

Member: I move at this time that the delegates present be authorized to cast the full vote of their delegations.

Mr. Nelson: You have heard the question, that the delegates present and regularly authorized, as stated by Mr. Canning, be empowered to cast the full vote of the delegation. All those in favor of the motion will say "Aye."

Motion carried.

Mr. Nelson: That brings us down I believe to the election of officers for the ensuing year.

Mr. Champlin: Mr. President and gentlemen of the State Agricultural Society of Minnesota: When we come to the important business of electing a president of this great association, it seems to me we should approach that duty with deliberation; that we should know that we are electing the right man to fill this important position, and it may not be altogether improper that I, owing to the fact that I may have a longer acquaintance with this society than almost any other man present,—that I should present a name for your consideration here today. I do not mean to say that a long acquaintance or association with this society carries with it any favors, but I simply state that I have had a long acquaintance with it. Back in 1860 when I came to Minnesota, about the first thing I did was to attend the state fair held at Fort Snelling in the old barracks, one year prior to the breaking out of the great Civil War. If there are any here who can antedate me in attendance at the fair, I wish you would stand up. I presume if there are some here, that you couldn't stand up. (Laughter.) I have watched the development and progress of this society from that day to this: from the time when its exhibit was nothing to be compared with some of the county fairs of today. I have been with it in its tour or itinerary over this state, when from year to year it passed from place to place, holding its exhibitions at Rochester and elsewhere, and I have watched the last few years its great development, until it has come to occupy the highest position of any exhibition of its kind in all this great land of ours, the United States of America.

Now when we come to select a man to preside over the deliberations of the officers who have charge of this great enterprise, it seems to me to be our duty to select, as I said before a man competent, capable and honest.

It is something to be said in favor of this organization that of all the millions of dollars that have been collected or disbursed, no taint of mismanagement attaches to its conduct from beginning to end: and the name that I would present to you for your consideration here today is the name of a man who has grown gray in your service,—whose more than twenty years' service on the board as an official, has been given freely and ably to the advancement of this great institution. He needs no eulogy from me: I point to you to the work he has performed, and there is no higher encomium for him that I could present to you today. He is a man that has been a wise and a faithful adviser, and he has at all times been a gentleman, as all of you know, who belongs to no clique, who pays tribute to no "ring," who recognizes no "boss," and it is with pleasure that I present the name of C. N. Cosgrove to be elected here today to succeed himself as president of this great Agricultural Society. (Applause.)

Mr. Nelson: You have heard the nomination of Mr. C. N. Cosgrove. Are there any further nominations?

Mr. Furlong: Mr. President, I rise at this time, to second the nomination of the man who has been so faithfully and beautifully described by the gentleman who has just proceeded me; a man (Mr. Champlin) that I have had the pleasure of being acquainted with for these many years, and a man to whom I have had to answer when he struck the gavel on the desk, and for whom, when he said "Thumbs up," we would have to raise our thumbs, but I have never known him to favor a cause that was not worthy. I have listened to him with great pleasure, and I need not say that I sanction each and every word that he has said in behalf of the gentleman whom he has nominated to preside over this, the greatest fair today, not only in this country, but in the world, of its kind. (Applause.) Who brought it about? You might say we all said "Amen" to its success, but to the man at the helm who assumed the responsibility of the work, the man who saw where the weak points were and who fixed up the weak points, the credit is largely due. Our fair today is acknowledged all over this land to be second to none of its kind in this country; we even go beyond the waters, and we hold our own with them, and we are going to take the lead. This is not a position that every man can fill. We feel proud of the management of our society, not only of the president, but of the secretary and all the rest of them, and I say at this particular time, we can ill afford to "swap horses in the middle of the stream," and I therefore second the nomination of our able and sterling engineer again for president, Mr. C. N. Cosgrove.

Member: Mr. Chairman, I believe every member of this society would be glad to eulogize the gentleman who has been nominated for president here, and I move we proceed with the election and go forward with the ballot.

Mr. Furlong: If it is not out of order, and I hope it will not be at this time, I move that we instruct the secretary to cast the ballot of this convention, to cast the ballot of this association, for Mr. C. N. Cosgrove as president of this society to succeed himself.

Member: I move as an amendment to that motion, that the rules be suspended and the election of president be made by a rising vote.

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The motion was then duly put and carried by a rising vote of the members present.

Secretary Randall: As instructed by the delegates of this convention, I hereby cast the vote of the members of this society for Mr. C. N. Cosgrove for president for the ensuing year.

Mr. Nelson: Is Mr. Cosgrove in the room?

Member: Mr. Cosgrove, Mr. President, is modest, and he is not in.

Mr. Nelson: I hereby declare Mr. C. N. Cosgrove duly elected president of the Minnesota State Agricultural Society for the ensuing year.

Calls for Mr. Cosgrove.

Mr. Cosgrove comes forward.

Mr. Nelson: Mr. Cosgrove, I want to congratulate the state of Minnesota, and especially the State Agricultural Society, in securing your services. I have no congratulations for you. (Applause.)

Mr. Cosgrove: Gentlemen, I need not say that I appreciate this honor, or that I thank you for it. It is a great honor. It is so much so that I should utterly fail to express the appreciation I have of it. We will proceed with our business. What is the next thing in order?

Mr. Randall: The election of first vice-president.

Mr. Cosgrove: The next thing will be the election of a first vice-president.

Wallace Nye: As an officer of the Commercial Club of this city, it has been my official duty to come before this society and present to its delegates the name of one of our Minneapolis farmers for the position of vice-president of our association. It has never been a burdensome task; on the contrary a very pleasant one. It is a task that has not taken much of my time, and need not take much of yours, because it needs no argument and no long speech to convince you that the gentleman whose name we presented to you four years ago, and which we have presented each succeeding year, has rendered excellent service to this society and the state, and I am inclined to believe that if we were to suggest someone else, our suggestion would not meet with favor. I take great pleasure, in behalf of the Commercial Club of this city, and I might add, in behalf of all the people of this state, in nominating for the office of first vice-president of this society Mr. B. F. Nelson.

Member: I second the nomination, and move that the secretary be instructed to cast the ballot of this society for Mr. B. F. Nelson for first vice-president.

The motion was duly put and carried.

Secretary Randall: As instructed by the delegates present, your secretary hereby casts the ballot of this society for Mr. B. F. Nelson for first vice-president for the ensuing year.

President Cosgrove: Mr. Nelson is duly elected as first vice-president. The next thing is the election of a second vice-president.

Member: Living in the county of Fillmore, I have the honor of presenting for second vice-president the name of Thomas G. Meighan, a gentleman who has been reared in the state of Minnesota as a farmer, very closely identified with all the interests of this state, it will be an honor to this society to elect him to the position of second vice-president or any other office of this society.

Mr. Meighan: Mr. Chairman, I rise to speak for myself. I appreciate the nomination, but I certainly cannot accept the position.

President Cosgrove: Thank you. Mr. Meighan declines to act.

J. H. Beck: I would nominate Mr. C. M. Griggs as Second Vice President of the Minnesota State Agricultural Society, son of Colonel Griggs, a worthy "chip off from the old block," and he is the man that is to eclipse P. T. Barnum's play before the grand stand, and he does it worthily,—Mr. C. M. Griggs, of St. Paul.

Mr. Clarke: We have an arrangement, which perhaps some of the gentlemen may not know about: we have an understanding in this society that St. Paul shall name the First Vice President one year, and Minneapolis the First Vice President the next,—the Vice Presidents to be elected from these two cities as a sort of compliment; and while there are gentlemen no doubt in the country that are well able to represent the society in this capacity, I think that that arrangement should not at this time be interfered with, and I take great pleasure in seconding the nomination of Mr. Griggs.

President Cosgrove: I understand that is true, yet any man in the state of Minnesota can be nominated for President or Vice President of this society.

Mr. Clarke: If there are no other nominations, I move that the Secretary be instructed to cast the ballot of this convention for Mr. C. M. Griggs for Second Vice President.

The motion, upon receiving a second, was duly put and carried.

President Cosgrove: It is so ordered.

Secretary Randall: As instructed by the delegates present, your Secretary hereby casts the vote of the State Agricultural Society for C. M. Griggs for the position of Second Vice President for the ensuing year.

President Cosgrove: The next vacancy to be filled is that of Wm. E. Lee as Manager. Nominations will now be in order for a gentleman to succeed Mr. Lee.

Mr. Morley: It has been said here that the duties of the executive officer are very arduous, and that he has accomplished great results with the co-operation of the other officers. I think, Mr. President, that it is the duty of the people of this society to see that the labors devolving upon the officers are properly carried out, and especially as these duties will be more arduous in the future than they have ever been in the past, I think Mr. Lee should be returned to the Board, and I take pleasure in nominating Mr. W. E. Lee to succeed himself.

Member: I move that the rules be suspended and that the Secretary be instructed to cast the ballot of the delegates present for Mr. Lee as a Manager to succeed himself:

Motion seconded and carried.

Secretary Randall: As instructed by the delegates present, I hereby cast the ballot of this Society for William E. Lee as a Manager for the ensuing three years.

President Cosgrove: I hereby declare William E. Lee duly elected as Manager to succeed himself.

The next is the election of a member of the Board of Managers to succeed Dean Liggett.

Member: Eighteen years ago this society put a new man on the Board. That man was in the prime of life, and for eighteen years he has given the very best of service to this society. He has grown gray in the service, and no man in the State of Minnesota has ever done more than William M. Liggett to build up the State Agricultural Society and the State Fair. I take great pleasure in nominating him to succeed himself.

Prof. Shaw: Mr. Chairman, it gives me pleasure to second the nomination of Col. W. M. Liggett to that position. I do not require to tell the stock men and farmers here today how ably Col. Liggett has fulfilled the duties of that office. Every man who has ever attended the show and has had any dealings in live stock lines with Col. Liggett will know better than I can tell him how well he has shown himself fitted for the discharge of the duties of that office. I therefore think, gentlemen, it would be nothing short of a crime not to elect to that office again a man who has discharged the duties of that office so well.

Member: I know Col. Liggett of old, and I know that every word that has been said about him is true, and I move that the Secretary be instructed to cast the ballot of this society for Col. Liggett to succeed himself.

Motion duly seconded and carried.

Secretary Randall: As instructed by the delegates present, I hereby cast the ballot of this society for William M. Liggett as a Manager for the ensuing three years.

President Cosgrove: I hereby declare Col. Liggett duly elected to the office of Manager. The next thing, I think, is the report of the Committee on Resolutions. Mr. Furlong, I believe, is the Chairman of that Committee.

Mr. Furlong: Mr. President and Gentlemen of the Convention: You all know I am a man of very few words: (laughter and applause) and our Committee on Resolutions has adopted my adage also, to be a committee of "few words" in their resolutions, hence I will read to you what they have to offer:

REPORT OF COMMITTEE ON RESOLUTIONS.

We, the Committee on Resolutions, after fully considering each subject and the many interests represented, do recommend them as being of material interest to the great State of Minnesota and recommend their adoption.

Resolved, that this Society approves the plan of holding an Exposition upon the State Fair Grounds in 1908 as a means of suitably celebrating the semi-centennial of Minnesota's admission to the Union and of adequately

showing the magnificent development of the State during the first fifty years of its history.

Whereas, in view of the danger of the importation into Minnesota of the Gipsy and Brown tail moths and other injurious insects, including the San Jose scale, which has now worked its way northwest as far as the Chicago parks and in view, further, of the increase of native insect pests as orchard and farm acreage increases it is hereby

Resolved, by the State Agricultural Society at this meeting, that we endorse the efforts of the Committee appointed by the Horticultural Society, consisting of Mr. Underwood, Judge Moyer and the State Entomologist to secure an appropriation to have colored charts of these dangerous insects placed in the ungraded and graded schools of Minnesota in order that our pupils and teachers and people generally may become better acquainted with the appearance of these dangerous pests.

Resolved, that the Minnesota State Agricultural Society in annual meeting assembled respectfully urge our congressmen and senators to use their utmost endeavors for a parcels post.

To oppose the appropriation annually made now for many years for the distribution of seeds by the United States Department of Agriculture, unless such distribution be made strictly in conformity with the original purpose of testing new and improved varieties.

Resolved, that the Secretary of this Society be instructed to transmit promptly a certified copy of these resolutions to each member of Congress and Senator from this State.

Resolved, that the Minnesota State Agricultural Society endorse the plan providing for the appointment of an Inspector of Bees and the stamping out of disease of bees.

Whereas, the Board of Managers of the Agricultural Society conceived the idea of erecting a Live Stock Pavilion at the most convenient locality on the State Fair Grounds.

The breeders and friends of Agriculture supplicated long, but in vain. Our State Fair Management, ever alert and keen in behalf of the great breeding and agricultural interests of the State and the entire Northwest undertook the great task. Obstacles of every kind known only to them were overcome. And finally after the State Legislature in their magnanimity appropriated \$50,000 for this purpose, the State Fair Management appropriated the sum of \$59,000 to complete this very useful building.

The people of the State of Minnesota and the great Northwest desire to most heartily thank the State Fair Management for the great work done in behalf of the breeding and agricultural interests of the State of Minnesota and the Northwest, and

Therefore, be it resolved, that we, the members of the State Agricultural Society express our sincere thanks to the Management of the Minnesota State Fair and in conceiving and building and supplying the funds for the most magnificent Live Stock structure in the world.

Signed:

J. J. FURLONG.
JOHN A. TIMPANE,
JOHN C. MILLS.
WYMAN ELLIOT.

Member: I move the adoption of the resolutions as read.

Motion seconded.

President Cosgrove: It is moved and seconded that the resolutions, as read by the Chairman of the Committee, be adopted. Do you wish to adopt them as a whole or section by section?

Members: As a whole.

President Cosgrove: Are there any remarks? If not, we will vote on the question. All in favor of the motion say "Aye."

The Ayes respond.

President Cosgrove: Contrary "No."

The Noes respond.

President Cosgrove: The resolutions are adopted. The Minnesota Live Stock Breeders' Association will meet in this room at 2 o'clock.

Mr. Hodgson: I rise to make a motion, which is, that the officers of this society be requested to confer with the officers of the State Dairy-men's Association and the State Horticultural Society, and, by the way, any other important farmers' associations, and see if an arrangement can not be made whereby they will hold their annual meetings consecutively with this society, one after the other, so that those farmers and members who desire to attend more than one, can do so by making one trip.

President Cosgrove: Gentlemen, you have heard the motion. Does it receive a second?

Member: Second the motion.

The motion was then put by the Chair and duly carried.

Moved, seconded and carried to adjourn.

BOARD MEETINGS DURING 1906

The Board of Managers met in St. Paul, January 18th, and organized by the election of E. W. Randall, as secretary, and F. J. Wilcox, as treasurer.

President Cosgrove appointed the following superintendents and committees and his appointments were approved by the board.

SUPERINTENDENTS OF DIVISIONS.

- A. Horses—G. W. Patterson, Worthington.
- B. Cattle—W. M. Liggett, St. Anthony Park.
- C. Sheep—J. S. Bangs, South St. Paul.
- D. Swine—J. S. Bangs, South St. Paul.
- E. Poultry—Leslie Parlin, St. Paul.
- F. Dairy Produce—A. W. Trow, Glenville.
- G. Horticulture and Floriculture—J. M. Underwood, Lake City.
- H. Honey, Apiary and Sugar—J. M. Underwood, Lake City.
- J. Vegetables, Grain and Farm Produce—J. M. Underwood, Lake City.
- K. Woman's Department—B. F. Nelson, Minneapolis. Assistant Superintendent—Mrs. M. L. Luther, 523 Forest avenue, Minneapolis.
- L. Exposition Building—B. F. Nelson, 107 Kasota building, Minneapolis.
- M. Manufactures, Machinery Department, Farm Implements, Carriages—Wm. E. Lee, Long Prairie.
- Amusements—C. M. Griggs, St. Paul.
- Gates—C. N. Cosgrove, Le Sueur.
- Police—D. S. Hall, Buffalo Lake.
- Forage—W. M. Liggett, St. Anthony Park. Assistant Superintendent—W. A. Peterson.
- Privileges—L. D. Baird, Austin.
- Collector of Privileges—A. C. Page, Austin.
- Sanitation—W. M. Curtis, Howard Lake.
- Grounds—E. W. Randall, State Fair Grounds, Hamline.

STANDING COMMITTEES.

- Executive—Liggett, Underwood, Nelson, Griggs.
- Reception—Patterson, Hall, Baird.
- Auditing—Underwood, Liggett, Griggs.
- Amusement—Griggs, Underwood, Nelson, Liggett.
- Advertising—Hall, Liggett, Patterson, Lee, Bair.
- Transportation—Nelson, Lee, Patterson, Hall, Griggs
- Tickets—Lee, Baird, Nelson, Patterson.
- Privileges—Baird, Lee, Underwood, Hall.

At a meeting of the board of managers, held at the Merchants Hotel, in St. Paul, on Thursday, February 8th, 1906, the report of the premium list committees was received and adopted. (See premium list of 1906.)

The following race program was adopted and its publication authorized:

RACE PROGRAM.

Monday.

No. 1—2:35 Class, trotting.....	\$2,500
No. 2—2:09 Class, pacing	1,000
No. 3—Running Race, $\frac{1}{2}$ -mile heats, 2 in 3.....	200
No. 4—Running Race, $1\frac{1}{8}$ miles, selling.....	250

Tuesday.

No. 5—2:13 Class, pacing, St. Paul purse.....	\$5,000
No. 6—2:19 Class, trotting.....	1,000
No. 7—3:00 Class, trotting, 2 in 3, 3-year-olds or under.....	500
No. 8—Running Race, $\frac{5}{8}$ -mile heats, 2 in 3.....	200

Wednesday.

No. 9—2:30 Class, pacing.....	\$2,500
No. 10—2:14 Class, trotting	1,000
No. 11—3:00 Class, pacing, 2 in 3, 3-year-olds or under.....	500
No. 12—Running Race, $1\frac{1}{8}$ miles, selling.....	250

Thursday.

No. 13—2:18 Class, pacing	\$1,000
No. 14—2:25 Class, trotting	1,000
No. 15—Running Race, $1\frac{1}{2}$ miles, novelty.....	250
No. 16—Running Race, $\frac{5}{8}$ -mile heats, 2 in 3.....	200

Friday.

No. 17—2:21 Class, trotting, Minneapolis purse.....	\$5,000
No. 18—2:23 Class, pacing	1,000
No. 19—Running Race, $1\frac{1}{8}$ mile, selling.....	250

Saturday.

No. 20—2:28 Class, pacing	\$1,000
No. 21—2:10 Class, trotting	1,000
No. 22—Running Race, $\frac{5}{8}$ -mile heats, 2 in 3.....	200
No. 23—Running Race, $1\frac{1}{8}$ mile, selling.....	250

CONDITIONS GOVERNING HARNESS RACES.

Five to enter and three to start.

Money divided 50, 25, 15 and 10 per cent.

A horse distancing the field, or any part thereof, is only entitled to first money.

Entries close July 2nd, when horses must be named. Records made that day no bar.

The rules of the American Trotting Association, of which this society is a member, shall govern harness races, unless otherwise provided.

The society reserves the right to change the order of the program or declare races off in case of rain.

Unless otherwise specified, all races shall be mile heats, best three in five. No race longer than five heats. Money to be paid in accordance with the summary at the end of the fifth heat. Horses not standing for money at the end of third heat cannot start in fourth and fifth heats, but horses ruled out under this condition shall not lose their right to a division of the money according to the final summary, should any horse be distanced or ruled out in the fourth and fifth heats.

Entrance Fee—Five per cent of the purse, due and payable before the race starts; and five per cent additional from money winners.

Entries cannot be transferred.

One horse may be entered in two classes, and be held out for one entry, unless two starts are made, and a horse may be declared out on or before August 15th by the payment of three per cent of the purse. In either case should the purses for which the horse is entered be of different amounts, the entrance or declaration fee shall be based on the larger purse.

Two horses may be entered in one class and be held for the entry of the horse that starts. But one entry fee will be required if neither start.

Consolation—For any class presenting over twelve starters for the first heat of its race, ten per cent of the purse will be added as a consolation for non-winners, whether distanced or not, to be contested for at the close of the race. One heat only; no added entrance fee; money divided 50, 30 and 20 per cent. Horses ruled out for fraud not eligible.

A colt to be eligible to the colt races, No. 7 and No. 11, must be owned in full at time of entry, within the five states of Minnesota, Wisconsin, Iowa, North Dakota and South Dakota. The colt must also be either (a) the get of a stallion owned and standing at the time of service within the territory prescribed above, in which case it may be foaled elsewhere, or (b) the produce of a mare owned and foaling it within the limits of the prescribed territory, in which case it may be the get of an outside stallion.

Hopples barred in all trotting races. Hopples barred in the 3:00 class pacing.

Trotting and pacing races on mile track.

CONDITIONS GOVERNING RUNNING RACES.

Entrance fee, five per cent of purse.

Entries close the day before the race at 11 o'clock a. m. Weights up. Governed by American Racing Rules, except as to license for riders.

In the 1½ mile novelty race \$50 will be paid to the horse first at the half mile, \$50 to the horse first at the mile, and the usual division of the remaining \$150 among the horses placed at the end of the race.

In races Nos. 4 and 19, 1½ mile selling, for three-year-olds and upwards, all to be entered for \$600, two pounds allowed for each \$100 to \$200; ten pounds below scale. Purse \$250.

In races Nos. 12 and 23, 1½ mile selling, for three-year-olds and upwards, all to be entered for \$700; three pounds allowed for each \$100 to \$200. Purse \$250. Beaten horses not liable to claim.

In races Nos. 8, 16 and 22, non-winners will be allowed five pounds for each start. In race No. 22 horses that have been unplaced during meeting will be allowed five pounds additional.

Running races on half-mile track.

Evening running exhibitions, usual inducements.

For information, entry blanks or making entries, address,

E. W. RANDALL, Secretary,
State Fair Grounds,
Hamline, Minn.

Board meetings were held April 11th, June 29th, Aug. 3rd, each day during the fair, Oct. 5th, and Nov. 27th. The executive and other committees held meetings as occasion required. Repairs and improvements were ordered as necessity demanded.

The amusement program as finally arranged and carried out at the 1906 fair, was as follows:

GRAND STAND DAY PROGRAMME.

MONDAY—LABOR DAY.

- No. 1—2:35 Class, trotting, \$2,500.
- No. 2—2:09 Class, pacing, \$1,000.
- No. 3—Running Race, $\frac{1}{2}$ -mile heats, 2 in 3, \$200.
- No. 4—Running Race, $1\frac{1}{2}$ -mile, selling, \$250.

TUESDAY—ST. PAUL DAY.

- No. 5—2:13 Class, pacing, St. Paul purse, \$5,000.
- No. 6—2:19 Class, trotting, \$1,000.
- No. 7—3:00 Class, trotting, 2 in 3, three-year-olds or under, \$500.
- No. 8—Running Race, $\frac{1}{2}$ -mile heats, 2 in 3, \$200.

WEDNESDAY—LIVE STOCK AND DAIRY DAY.

- No. 9—2:30 Class, pacing, \$2,500.
- No. 10—2:14 Class, trotting, \$1,000.
- No. 11—3:00 Class, pacing, 2 in 3, three-year-olds or under, \$250.
- No. 12—Running Race, $1\frac{1}{2}$ -mile, selling, \$250.

THURSDAY—STATE AND TERRITORIAL DAY.

- No. 13—2:18 Class, pacing, \$1,000.
- No. 14—2:25 Class, trotting, \$1,000.
- No. 14½—2:02 Class, pacing, 2 in 3, \$2,000.
- No. 15—Running Race, $1\frac{1}{2}$ -mile, novelty, \$250.
- No. 16—Running Race, $\frac{1}{2}$ -mile heats, 2 in 3, \$200.

FRIDAY—MINNEAPOLIS DAY.

Live stock parade.

- No. 17—2:21 Class, trotting, Minneapolis purse, \$5,000.
- No. 18—2:23 Class, pacing, \$1,000.
- No. 19—Running Race, $1\frac{1}{2}$ -mile, selling, \$250.

SATURDAY—EVERYBODY'S DAY.

- No. 20—2:28 Class, pacing, \$1,000.
- No. 21—2:10 Class, trotting, \$1,000.
- No. 22—Running Race, $\frac{1}{2}$ -mile heats, 2 in 3, \$200.
- No. 23—Running Race, $1\frac{1}{2}$ -mile, selling, \$250.

James J. Hill, president of the Great Northern Railway, delivered an address, opening the fair and dedicating the new live stock amphitheater, Monday, Sept. 3rd, at 11 o'clock a. m. "Dan Patch," king of pacers, and "Cresceus," king of trotters, were each driven against his own world's record in the afternoon. A twenty-four mile ladies' relay race; three contestants, riding four miles per day, changing horses every mile was put on. These, with the Zouaves, eight Allisons, the Pickards, four brass bands, balloon ascensions and many other high-class features made up the greatest programme ever seen anywhere.

MOSCOW.

Pain's most brilliant spectacular pyrotechnic exhibition, with running races by electric lights, martial music and a complete program of special attractions before the grand stand every night.

AGRICULTURAL SOCIETIES

STATE AGRICULTURAL SOCIETY.

(Revised Laws of 1905.)

3079. Confirmation—Purposes.—The State Agricultural Society as it now exists is hereby confirmed and established as a public corporation. The conveyance to the State of the land in Ramsey County known and used as "The State Fair Grounds" is hereby confirmed, and the same shall be held by the state forever for the following public purposes, and no other: For the exhibiting thereon annually, under the management and control of said Society, the agricultural, stock-breeding, horticultural, mining, mechanical, industrial and other products and resources of the state, including proper exhibits of the arts and sciences, and all other public exhibitions pertinent to expositions of human art, industry, or skill. Neither the state nor said Society shall ever charge or incumber said property. ('03 c. 126 ss. 1, 2, 8.)

Society a department of the state government and its managers public officials. Exempt from civil liability. Constitutionality of 1903 c. 126 (93-125, 100+732; 104+534).

3080. Membership.—Its membership, except honorary, shall be confined to citizens of Minnesota and shall hereafter be composed as follows:

First—Three (3) delegates to be chosen annually by each of the county and district agricultural societies in this state, and in case any such society shall fail or neglect to appoint such delegates, then and in that event the president, secretary and treasurer of such society shall by virtue of their offices be members of the said State Agricultural society.

Provided, that if no county agricultural society exists in any county, or any such society shall fail to hold an annual fair, and any city therein shall maintain annually a street fair devoted to agricultural interests, then any three (3) delegates chosen by any such street fair association, or if such street fair association fails or neglects to choose such delegates then the president, secretary and treasurer of said street fair association shall by virtue of their offices be members of the State Agricultural society; and provided further, that when there is in any county more than one such fair association, the senior association shall be entitled to such membership; and provided further, that all such societies and associations shall maintain an active existence and hold annual fairs and shall have paid out each year the sum of \$300 in premiums and have an annual membership of twenty-five or more members.

Second—One (1) delegate from each county in the state, in which no agricultural society or street fair association exists, which delegate the county commissioners of each such county are authorized to appoint.

Third—Honorary members who by reason of eminent services in agriculture or horticulture, or in the arts and sciences connected therewith, or of long and faithful services in the society, or of benefits conferred upon it may, by a two-thirds (2/3) vote at any of its annual meetings be elected as such.

Fourth—Two delegates selected by, and the presidents ex-officio, of the following societies and associations: , State Horticultural society, the State Amber Cane society, the State Dairymen's association, the State Forestry association, the State Poultry association, the State Beekeepers' association, and the Minnesota Stock Breeders' association, and any other state society or association within the state, having for its object the promotion of any branch of agriculture, horticulture, stock raising, or improvement or mechanics related to agriculture or horticulture.

Fifth—The members of the governing board of said society and its officers shall by virtue of their offices as such be and become members of said society. ('03 c. 126 s. 3.) (See 1905 c. 307.)

3081. Governing Board—Annual Meeting—Auditors.—The management and control of its affairs shall be vested in its president, two vice-presidents, and six other managers, to be known as its governing board, all of whom shall be citizens of this state and any five thereof shall constitute a quorum. The annual meeting of such society shall be held at such place in St. Paul or Minneapolis or upon the state fair grounds as the governing board may select, on the second Tuesday in January. It shall continue until the following Thursday, on which day a president and two vice presidents shall be elected for terms of one year each, and also two managers for terms of three years each, who shall take the place of the present managers as their respective terms expire so that two of the said six other managers shall be chosen each year. The governor and three other persons appointed by him, with the advice and consent of the senate, shall constitute a board of auditors, who shall examine all transactions of said society, and report to the legislature at each session thereof. ('03 c. 126 s. 4.)

3082. Secretary and Treasurer—Term—Compensation.—On the third Tuesday of January in each year the president, vice presidents, and board of managers shall elect a secretary and a treasurer, each of whom shall hold office for one year and until his successor qualifies. Their compensation and that of other officers of the society shall be fixed by such board. ('03 c. 126 s. 6.)

3083. Annual Report—Contents.—On or before December 10, of each year, the secretary shall make a report to the governor, showing all of the proceedings of the society during the current year, and its financial condition as appears from the books of the treasurer. Such reports shall contain a full detailed statement of all receipts and expenditures during such year, which shall be printed in like manner as the report of state officers. ('03 c. 126, 6.)

3084. Property Vested in State—Moneys, How Expended.—The title to all money and other property of such society shall vest in the state, and there shall be no division of its assets among its members. All moneys

received by said society shall be used in the holding of its annual fair and for the improvement of the fair grounds, the payment of expenses, premiums, and purses and furnishing such attractions and amusements as the governing board shall deem necessary for the success of its fairs. ('03 c. 126 s. 7.)

3085. Management of Property—General Offices.—The custody, management and control of said fair grounds and all structures thereon shall be vested in said society as a department of the state, and its general offices, containing its property and records, shall be maintained upon said fair grounds. ('03 c. 126 s. 9.)

3086. Exhibitions—Standing Appropriation.—Said society shall hold upon said fair grounds an annual fair, and may invite the co-operation of any other states or countries therein. It shall provide for and pay premiums, and all moneys expended for premiums, exhibits, or other displays shall be for the purpose of encouraging agriculture, horticulture, stock breeding, manufactures, and the mining, mechanical, and industrial arts and sciences. The sum of Four Thousand Dollars (\$4,000) is annually appropriated out of the revenue fund, to aid said society in the payment of such premiums, the same to be paid out by the state treasurer upon the order of the president and treasurer of the society countersigned by its secretary. ('03 c. 126 s. 10.)

3087. Rules and Regulations.—Said society may make all by-laws, ordinances, and rules consistent with law, which it may deem necessary or proper for the government of said fair grounds and all fairs to be held thereon, and for the protection, health, safety and comfort of the public thereon, and provide penalties for their violation; the same to be in effect from the time of filing with the secretary of the society. ('03 c. 126 s. 11.)

3088. To License Privileges.—Said society may license and regulate all shows, exhibitions, performances, and privileges on said grounds, and may revoke any such license, and prohibit, remove, and summarily stop all exhibitions, performances, or privileges which it may deem offensive to good morals or which are contrary to law. ('03 c. 126 s. 12.)

3089. Unlicensed or Improper Exhibitions.—Every person who shall engage in any play, game, concert, theatrical or other performance, or exhibit any show, caravan, circus, or curiosity, for which pay or an admission fee is required or received, without license therefor by the governing board, and any person who shall exhibit or perform therein any indecent, obscene or immoral play or other representation, shall be guilty of a misdemeanor. If any show or exhibition licensed shall prove to be indecent, obscene, or immoral, the governing board shall forthwith close the same, and the license fee paid for such privilege, and any and all other moneys which may have been paid in connection therewith, shall be forfeited to the society. ('03 c. 126 s. 23.)

3090. May Contract in Its Own Name.—Said society may contract in its own name, and through its duly appointed officers and agents, and the provisions of this subdivision, and all ordinances, by-laws, rules and regulations adopted by its governing board shall be deemed a part of every such contract entered into with an exhibitor, privilege holder, lessee, licensee or other person. ('03 c. 126 s. 25.)

3091. Special Peace Officers.—At or before the time of holding any such fair, the president of said society may appoint, in writing signed by him, as many persons to act as special constables as he may judge necessary for and during the time of holding the same and for a reasonable time prior and subsequent thereto. Such constables before entering upon their duties, shall take and subscribe the usual oath of office, indorsed upon their appointment, and shall have and exercise upon the grounds of said society, and within one-half mile thereof, all the power and authority of constables at common law, and in addition thereto, may, within such limits without warrant arrest any persons found violating any law of the state, or any rule, regulation, by-law, or ordinance of said society, and may summarily remove the persons and property of such offenders from the grounds, and take them before any court of competent jurisdiction to be dealt with according to law. The president, vice presidents, and members of the board of managers shall also have all the powers by this section conferred upon such constables. Every such peace officer shall wear some appropriate badge of office while acting as such. ('03 c. 126 ss. 13, 14.)

3092. Sale of Liquors.—No person shall sell, barter, give away or otherwise dispose of or introduce, have or keep for barter, gift or sale any spirituous, malt or fermented liquors or intoxicating liquors of any kind upon or within one-half mile of the state fair grounds, or aid or abet in so doing, and the presence and possession of any kind of such liquors in any quantity upon the person or upon the premises leased or occupied by any person within said limits, is declared a public nuisance, and shall be *prima facie* evidence of the purpose of such person to barter, give away or sell the same. Any person who shall violate any provision of this section shall be guilty of a misdemeanor. (2008; '95 c. 103.)

3093. Lockup—Seizure of Liquors.—Said society is authorized to provide and maintain a watchhouse or lockup on said grounds for the confinement of offenders and the temporary detention of suspected persons. The governing board, by itself or its special constables, shall without warrant seize and destroy any spirituous, malt, fermented, or intoxicating liquors of any kind found upon said grounds. ('03 c. 126 ss. 15, 17.)

3094. Holding Justice Court on Fair Grounds.—The governing board of said society may designate a justice of the peace of Ramsey county, who shall hold his court within the limits of said fair grounds while any fair is being held, and for one week prior and subsequent thereto, and there try and determine in a summary manner all cases within his jurisdiction, and not be required to grant any change of venue. While acting as such court he shall receive such compensation, not exceeding five dollars per day, as may be fixed by said governing board. All fines, penalties, and costs collected for any offence committed on said grounds shall forthwith be paid to the treasurer of said society, and his receipt therefor filed by the court with the county auditor. Said governing board may appoint and provide for the compensation of a person to prosecute actions before said court, or to act as its legal adviser. ('03 c. 126 s. 24.)

3095. Larceny of Ticket.—Any person who shall steal or unlawfully obtain any tickets, paper, or other writing entitling, or purporting to entitle the holder to admission to the state fair grounds, or any part thereof, or who shall sell, or dispose of any such ticket which upon its face appears

to have been issued to another and not transferable, without informing the purchaser of its character, shall be guilty of misdemeanor. ('03 c. 126 s. 22.)

3096. Misdemeanors.—In addition to other misdemeanors specified in and made punishable by a statute, every person who shall trespass on, enter, or attempt to enter said fair grounds, by jumping, climbing, or passing through any inclosure, or in any manner except through the gates provided therefor, or shall enter such gates or other reserved inclosures on said grounds without authority of the governing board or its authorized officers, or who shall obtain permission to enter said grounds by impersonating another, or by any misrepresentation or false pretense, or who shall be found lurking, lying in wait, or concealed in any building, yard, or premises, upon said fair grounds, or loitering about the immediate vicinity thereof with intent to steal or commit other offences or mischief, shall be guilty of a misdemeanor. ('03 c. 126 s. 21.)

COUNTY AGRICULTURAL SOCIETIES.

3097. Formation—General Powers.—An agricultural society may be formed by citizens of any county or of two or more counties jointly but only one such society shall be organized in a county. Such society shall have jurisdiction and control of the grounds upon which it holds its fairs, and of the streets and grounds adjacent thereto during such fair, so far as may be necessary to preserve good order, and it may make all rules and regulations necessary for such purpose. Every person who shall wilfully violate any such rule or regulation during the days of a fair shall be guilty of a misdemeanor. (2975, 2976.)

3098. Standing Appropriation for County Societies.—The sum of fourteen thousand dollars is hereby annually appropriated to county agricultural societies and joint-stock societies holding agricultural fairs, and butter, cheese, dairy and stock associations of the state, pro rata to be paid out in premiums at the fairs of only such societies as have an annual membership of twenty-five or more members, maintain an active existence, hold annual fairs and which have paid out in premiums as much as they receive from the state. Such pro rata shall be paid to the oldest active society in a county, except where there are two of the same age, when it shall be divided equally between them. All payments hereunder shall be made only upon the filing with the state auditor of a sworn statement showing the holding of the fairs and the payment in premiums of the amount claimed from the state, or that such societies have advertised annual fairs, and been prevented from holding the same, and have incurred expense in such advertising and preparation for the same, equal to the amount claimed from the state. The secretary of the state agricultural society on or before April 10 in each year shall certify to the state auditor a list of all county agricultural and joint-stock societies that have complied with this section. ('97 c. 86.)

3099. County Lands May be Leased, When.—Any county board of any county may lease to agricultural societies established and existing in its county, for such period and on such terms as it shall deem expedient, any lands of the county, to be used by such society for fair purposes. Said

society may construct on such leased land suitable buildings, race tracks and other improvements. (2977.)

3100. Annual Meeting—Secretary's Report.—Every such society shall hold an annual meeting for the election of officers and the transaction of other business at the time named in its by-laws, at or before which its secretary shall make a report of its proceedings during the preceding year. Such report shall contain a statement of all transactions at its fair, the number of entries, the amount and source of all moneys received, and the amount paid out for premiums and other purposes, and show in detail its entire receipts and expenditures during such year. Said report, or a certified copy thereof, shall be filed with the register of deeds of such county. (2978, 2979.)

3101. Delegates to State Society.—The president of every such society and two members to be elected annually shall be members of the state agricultural society. (2980.)

OFFICERS OF THE SOCIETY, 1887-1905

OFFICERS OF THE SOCIETY, FOR 1887.

President	W. R. MERRIAM.....	St. Paul
Vice-President	IGNATIUS DONNELLY	Hastings
Secretary	H. E. HOARD.....	Montevideo
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

CLARKE CHAMBERS, Owatonna.....	Term expires 1888
JAMES McHENCH, Fairmont.....	Term expires 1888
A. N. JOHNSON, Benson.....	Term expires 1889
JOHN F. NORRISH.....	Term expires 1889
JOHN COOPER, St. Cloud.....	Term expires 1890
L. H. PROSSER, Wykoff.....	Term expires 1890

OFFICERS AND BOARD OF MANAGERS, FOR 1888.

President	W. R. MERRIAM.....	St. Paul
First Vice-President.....	F. C. HILLSBURY.....	Minneapolis
Second Vice-President	JAS. McHENCH	Fairmont
Secretary	H. R. DENNY.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

C. N. COSGROVE, Le Sueur.....	Term expires 1891
A. N. JOHNSON, Benson.....	Term expires 1889
JOHN COOPER, St. Cloud.....	Term expires 1890
CLARKE CHAMBERS, Owatonna.....	Term expires 1888
JOHN F. NORRISH, Hastings.....	Term expires 1889
L. H. PROSSER, Wykoff.....	Term expires 1890

**OFFICERS AND BOARD OF MANAGERS,
FOR 1889.**

President	WM. M. BUSHNELL.....	St. Paul
First Vice-President	F. C. PILLSBURY.....	Minneapolis
Second Vice-President	S. M. EMERY.....	Lake City
Secretary	H. R. DENNY.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

JOHN COOPER, St. Cloud.....	Term expires 1890
L. H. PROSSER, Wykoff.....	Term expires 1890
C. N. COSGROVE, Le Sueur.....	Term expires 1891
CLARKE CHAMBERS, Owatonna.....	Term expires 1891
JOHN F. NORRISH, Hastings.....	Term expires 1892
WM. M. LIGGETT, Benson.....	Term expires 1892

**OFFICERS AND BOARD OF MANAGERS,
FOR 1890.**

President	F. C. PILLSBURY.....	Minneapolis
First Vice-President	D. H. MOON.....	St. Paul
Second Vice-President	S. M. EMERY.....	Lake City
Secretary	WM. M. LIGGETT.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

C. N. COSGROVE, Le Sueur.....	Term expires 1891
CLARKE CHAMBERS, Owatonna.....	Term expires 1891
JOHN F. NORRISH, Hastings.....	Term expires 1892
WM. M. LIGGETT, Benson.....	Term expires 1892
JOHN COOPER, St. Cloud.....	Term expires 1893
J. J. ALEXANDER, Northfield.....	Term expires 1893

**OFFICERS AND BOARD OF MANAGERS,
FOR 1891.**

President	D. M. CLOUGH.....	Minneapolis
First Vice-President	LANE K. STONE.....	St. Paul
Second Vice-President	LYSANDER COOKE.....	Good Thunder
Secretary	SAM PARTRIDGE	Hamline
Assistant Secretary	W. F. CROSS.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

C. N. COSGROVE, Le Sueur.....	Term expires 1894
CLARKE CHAMBERS, Owatonna.....	Term expires 1894
JOHN F. NORRISH, Hastings.....	Term expires 1892
WM. M. LIGGETT, Benson.....	Term expires 1892
W. R. TANNER, Moorhead.....	Term expires 1893
J. J. FURLONG, Austin.....	Term expires 1893

**OFFICERS AND BOARD OF MANAGERS,
FOR 1892.**

President	J. H. BURWELL.....	St. Paul
First Vice-President	J. H. STEVENS.....	Minneapolis
Second Vice-President	ED. WEAVER	Mankato
Sec'y and Gen'l Manager....	W. F. CROSS.....	Hamline
Ass't Sec'y and Librarian....	SAM PARTRIDGE	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

W. M. LIGGETT, Benson.....	Term expires 1895
J. H. LETSON, Alexandria.....	Term expires 1895
C. N. COSGROVE, Le Sueur.....	Term expires 1894
CLARKE CHAMBERS, Owatonna.....	Term expires 1894
W. R. TANNER, Moorhead.....	Term expires 1893
J. J. FURLONG, Austin.....	Term expires 1893

**OFFICERS AND BOARD OF MANAGERS,
FOR 1893.**

President	J. H. STEVENS.....	Minneapolis
First Vice-President	ED. WEAVER	Mankato
Second Vice-President	DR. J. H. MURPHY.....	St. Paul
Sec'y and Sup't of Grounds..	W. F. CROSS.....	Red Wing
Treasurer	A. B. MOFFATT.....	Le Sueur

BOARD OF MANAGERS.

CLARKE CHAMBERS, Owatonna.....	Term expires 1894
C. N. COSGROVE, Le Sueur.....	Term expires 1894
W. M. LIGGETT, Benson.....	Term expires 1895
J. H. LETSON, Alexandria.....	Term expires 1895
J. J. FURLONG, Austin.....	Term expires 1896
E. W. RANDALL, Morris.....	Term expires 1896

**OFFICERS AND BOARD OF MANAGERS,
FOR 1894.**

President	J. H. STEVENS.....	Minneapolis
First Vice-President	ED. WEAVER	Mankato
Second Vice-President	D. H. MOON.....	St. Paul
Secretary	W. F. CROSS.....	Hamline
Assistant Secretary	GARDNER STEVENS	Minneapolis
Treasurer	A. B. MOFFATT.....	Mankato

BOARD OF MANAGERS.

W. M. LIGGETT, Benson.....	Term expires 1895
J. H. LETSON, Alexandria.....	Term expires 1895
J. J. FURLONG, Austin.....	Term expires 1896
E. W. RANDALL, Morris.....	Term expires 1896
C. N. COSGROVE, Le Sueur.....	Term expires 1897
CLARKE CHAMBERS, Owatonna.....	Term expires 1897

**OFFICERS AND BOARD OF MANAGERS,
FOR 1895.**

President	ED. WEAVER	Mankato
First Vice-President	WYMAN ELLIOT	Minneapolis
Second Vice-President	D. R. McGINNIS.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	A. B. MOFFATT.....	Mankato

BOARD OF MANAGERS.

J. J. FURLONG, Austin.....	Term expires 1896
E. P. WATSON, Morris.....	Term expires 1896
C. N. COSGROVE, Le Sueur.....	Term expires 1897
CLARKE CHAMBERS, Owatonna.....	Term expires 1897
W. M. LIGGETT, Benson.....	Term expires 1898
J. H. LETSON, Alexandria.....	Term expires 1898

**OFFICERS AND BOARD OF MANAGERS,
FOR 1896.**

President	ED. WEAVER	Mankato
First Vice-President	WYMAN ELLIOT	Minneapolis
Second Vice-President	D. R. McGINNIS.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	A. B. MOFFATT.....	Mankato

BOARD OF MANAGERS.

C. N. COSGROVE, Le Sueur.....	Term expires 1897
CLARKE CHAMBERS, Owatonna.....	Term expires 1897
W. M. LIGGETT, St. Anthony Park.....	Term expires 1898
J. H. LETSON, Alexandria.....	Term expires 1898
E. P. WATSON, Morris.....	Term expires 1899
J. E. COOLEY, Duluth.....	Term expires 1899

**OFFICERS AND BOARD OF MANAGERS,
FOR 1897.**

President	ED. WEAVER	Mankato
First Vice-President	D. R. McGINNIS.....	St. Paul
Second Vice-President	WYMAN ELLIOT	Minneapolis
Secretary	E. W. RANDALL.....	Hamline
Treasurer	A. B. MOFFATT.....	Mankato

BOARD OF MANAGERS.

W. M. LIGGETT, St. Anthony Park.....	Term expires 1898
J. H. LETSON, Alexandria.....	Term expires 1898
E. P. WATSON, Morris.....	Term expires 1899
J. E. COOLEY, Duluth.....	Term expires 1899
C. N. COSGROVE, Le Sueur.....	Term expires 1900
J. M. UNDERWOOD, Lake City.....	Term expires 1900

**OFFICERS AND BOARD OF MANAGERS,
FOR 1898.**

President	JOHN COOPER.....	St. Cloud
First Vice-President	WYMAN ELLIOT	Minneapolis
Second Vice-President	D. R. McGINNIS.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

E. P. WATSON, Morris.....	Term expires 1899
J. E. COOLEY, Duluth.....	Term expires 1899
C. N. COSGROVE, Le Sueur.....	Term expires 1900
J. M. UNDERWOOD, Lake City.....	Term expires 1900
W. M. LIGGETT, St. Anthony Park.....	Term expires 1901
J. H. LETSON, Alexandria.....	Term expires 1901

**OFFICERS AND BOARD OF MANAGERS,
FOR 1899.**

President	JOHN COOPER.....	St. Cloud
First Vice-President	CHESTER R. SMITH.....	St. Paul
Second Vice-President	GEO. H. PARTRIDGE.....	Minneapolis
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

C. N. COSGROVE, Le Sueur.....	Term expires 1900
J. M. UNDERWOOD, Lake City.....	Term expires 1900
W. M. LIGGETT, St. Anthony Park.....	Term expires 1901
J. H. LETSON, Alexandria.....	Term expires 1901
N. S. GORDON, Crookston.....	Term expires 1902
J. C. CURRYER, Mankato.....	Term expires 1902

**OFFICERS AND BOARD OF MANAGERS,
FOR 1900.**

President	JOHN COOPER.....	St. Cloud
Second Vice-President	CHESTER R. SMITH.....	St. Paul
First Vice-President	THOS. H. SHEVLIN.....	Minneapolis
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

W. M. LIGGETT, St. Anthony Park.....	Term expires 1901
J. H. LETSON, Alexandria.....	Term expires 1901
N. S. GORDON, Crookston.....	Term expires 1902
J. C. CURRYER, Mankato.....	Term expires 1902
C. N. COSGROVE, Le Sueur.....	Term expires 1903
J. M. UNDERWOOD, Lake City.....	Term expires 1903

**OFFICERS AND BOARD OF MANAGERS,
FOR 1901.**

President	JOHN COOPER.....	St. Cloud
Second Vice-President	THOS. H. SHEVLIN.....	Minneapolis
First Vice-President	CHESTER R. SMITH.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

N. S. GORDON, Crookston.....	Term expires 1902
J. C. CURRYER, Mankato.....	Term expires 1902
C. N. COSGROVE, Le Sueur.....	Term expires 1903
J. M. UNDERWOOD, Lake City.....	Term expires 1903
W. M. LIGGETT, St. Anthony Park.....	Term expires 1904
W. G. SAWYER, Partridge.....	Term expires 1904

**OFFICERS AND BOARD OF MANAGERS,
FOR 1902.**

President	C. N. COSGROVE.....	Le Sueur
First Vice-President	CHESTER R. SMITH.....	St. Paul
Second Vice-President	B. F. NELSON.....	Minneapolis
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

J. M. UNDERWOOD, Lake City.....	Term expires 1903
J. D. BAIRD, Austin.....	Term expires 1903
W. M. LIGGETT, St. Anthony Park.....	Term expires 1904
W. G. SAWYER, Partridge.....	Term expires 1904
N. S. GORDON, Crookston.....	Term expires 1905
J. C. CURRYER, St. Paul.....	Term expires 1905

**OFFICERS AND BOARD OF MANAGERS,
FOR 1903.**

President	C. N. COSGROVE.....	Le Sueur
First Vice-President	B. F. NELSON.....	Minneapolis
Second Vice-President	CHESTER R. SMITH.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Hamline

BOARD OF MANAGERS.

W. M. LIGGETT, St. Anthony Park.....	Term expires 1904
WM. E. LEE, Long Prairie.....	Term expires 1904
N. S. GORDON, Crookston.....	Term expires 1905
J. C. CURRYER, St. Paul.....	Term expires 1905
J. M. UNDERWOOD.....	Term expires 1906
L. D. BAIRD, Austin.....	Term expires 1906

**OFFICERS AND BOARD OF MANAGERS,
FOR 1904.**

President	C. N. COSGROVE.....	Le Sueur
First Vice-President	CHESTER R. SMITH.....	St. Paul
Second Vice-President	B. F. NELSON.....	Minneapolis
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

N. S. GORDON, Crookston.....	Term expires 1905
J. C. CURRYER, St. Paul.....	Term expires 1905
J. M. UNDERWOOD, Lake City.....	Term expires 1906
L. D. BAIRD, Austin.....	Term expires 1906
W. M. LIGGETT, St. Anthony Park.....	Term expires 1907
WM. E. LEE, Long Prairie.....	Term expires 1907

**OFFICERS AND BOARD OF MANAGERS.
FOR 1905.**

President	C. N. COSGROVE.....	Le Sueur
First Vice-President	B. F. NELSON.....	Minneapolis
Second Vice-President	C. M. GRIGGS.....	St. Paul
Secretary	E. W. RANDALL.....	Hamline
Treasurer	FRANK J. WILCOX.....	Northfield

BOARD OF MANAGERS.

J. M. UNDERWOOD, Lake City.....	Term expires 1906
L. D. BAIRD, Austin.....	Term expires 1906
W. M. LIGGETT, St. Anthony Park.....	Term expires 1907
WM. E. LEE, Long Prairie.....	Term expires 1907
D. S. HALL, Buffalo Lake.....	Term expires 1908
G. W. PATTERSON, Worthington.....	Term expires 1908

THE FUTURE OF AMERICAN AGRICULTURE

An Address Delivered by James J. Hill at the Dedication of the Live Stock Pavilion on the Minnesota State Fair Grounds, Sept. 3, 1906.

The highest conception of a nation is that of a trustee for posterity. The savage is content with wresting from nature the simple necessities of life. But the modern idea of duty is conservation of the old and modeling of the new in order that posterity may have a fairer dwelling place and thus transmit the onward impulse. The ideal of the prudent, loving, careful head of every family is the true ideal for a nation for rational men. The people of the United States, as far as any perhaps, have meant to follow this pattern. It is worth while to consider how far they have been successful and where they have failed. For not for eight centuries has any people found itself dowered with such embarrassment of riches.

The average man is often more interested in speculative theories than in his plain duty toward himself and his neighbor. The average state is filled with visions of its place in the procession of the years, while it overlooks the running account of daily expenses. Problems we have found and trifled with, in confusing number and variety; but the problem of the future material condition of our country, of an inventory of its assets and liabilities, of the inevitable demands upon its resources and the careful adjustments by which alone they may be preserved, has thus far been a subject for little more than a passing thought. National security calls for a just accounting of the business affairs of this great nation.

Let us try to cast our minds twenty or twenty-five years ahead and see what will then be our condition. The main elements of this problem which above all others is crowding upon our attention are three: Possibilities of population, actual and possible natural resources, and possibilities of productive application of one to the other. As the prudent man about settling himself in life sums up his possessions, his opportunities for earning income and the demands upon him of a family to be fairly cared for and left in a position to begin the world at least as advantageously as he himself, so the people of the United States should know with reasonable exactness just where we shall stand half a century from now.

INCREASE IN POPULATION.

The population index has the simplicity of ascertained vital statistics. Subtracting from the total population of the country as returned by each census since 1880 the immigration for the decennial period, the ratio of increase for the first decade is slightly over and for the second decade slightly under fifteen per cent. So careful an observer as Leroy Beaulieu gives the natural increase of our population as 15.2 per thousand per year. It is fair therefore to reckon the increase by the excess of birth over deaths at 15 per cent on the average for each decade. The additions by immigration are more variable. It is highly probable, however, that the oncoming tide will increase. Only in periods of severe depression has immigration fallen much below the half million mark for the last twenty-five years. In good or fairly good times it has gone greatly above. In the two years before 1905 it exceeded 800,000 annually, while for each of the last two years it has exceeded one million. It is a conservative estimate, therefore, to add 750,000 a year for increase of population from this source, or 7,500,000 for each decade. Computed on this basis, the population of the United States in the near future will show these totals: Population in 1910, 95,248,895; population in 1920, 117,036,229; population in 1930, 142,091,663; population in 1940, 170,091,663; population in 1950, 204,041,223.

The startling quality of these figures is the magnitude of our problem. It is not even a problem of tomorrow, but of today. Within forty-four years we shall have to meet the wants of more than two hundred million people. In less than twenty years from this moment the United States will have 130,000,000 people. Where are these people, not of some dim, distant age, but of this very generation now growing to manhood, to be employed and how supported? When the searchlight is thus suddenly turned on, we recognize not a mere speculation, but the grim face of that specter which confronts the unemployed, tramping hateful streets in hope of food and shelter.

CONGESTION IN CITY—SCARCITY IN COUNTRY.

We cannot adapt conditions to the future by restricting the growth of population. The natural increase by birth will continue. We may not, did we wish it, interfere with the immigration movement, except perhaps to enforce a more careful scrutiny of the moral and industrial fitness of these newcomers. Notwithstanding the addition of more than a million people a year from abroad, nearly all of them men and women who must work for a living, labor outside of the cities was never as scarce or wages as high as at the present time. Immigration lingers in the great centers and adds to the difficulties attending employment. The farms stretch out their hand in vain. Railroads in making extensions have to get help at the highest market price, and find a large percentage of those whom they employ mere hoboes who desert as soon as they have succeeded in getting transportation from one part of the country to another. Farmers besiege the employment agencies in vain, and offer the lazy tramp a sum for a day's work in the field unheard of in any other country in the world.

The situation grows more embarrassing yearly. Hours of labor are being reduced in some of the states for farm as well as shop hands. Men are scarcer as the movement of population to the cities grows more pro-

nounced. A considerable portion of this year's magnificent crop will be either reduced in quality or altogether lost by reason of the impossibility of getting labor to handle it properly. Discouraged small farmers now are selling their land to larger proprietors who can profitably substitute machinery for men. The country needs more workers on the soil. Not to turn the stranger away, but to direct him to the farm instead of the city; not to watch with fear a possible increase in the birth rate, but to use every means to keep the boys on the farm and to send youth from the city to swell the depleted ranks of agricultural industry, is the necessary task of a well advised political economy and an intelligent patriotism.

ARABLE PUBLIC LAND ALMOST DISAPPEARED.

The United States has been able easily to take care of the great increase of population in the past because it had a vast area of unoccupied land. This was the main asset in its natural inheritance. Within practically the last half of the last century the whole country from the Mississippi river to the Rocky Mountains was occupied. No pressure of population could make itself severely felt when it might be turned loose in such an empire. In those fifty years there were added 547,640,932 acres to the agricultural area, an increase of nearly 200 per cent, and the increase in the actually improved acreage was nearly 300 per cent. This is cut off from the list of our resources. Within the last six years there have been transferred from public to private ownership more than one hundred million acres of government land, an area twice the size of the state of Minnesota. The entire area of surveyed and unappropriated land within the United States is only two and a half times that amount. At the present rate, therefore, every acre of public land would disappear within the next fifteen years. But as a large percentage of the lands included in this estimate are wholly or partially unfit for tillage, it is literally true to say that our arable public lands have almost disappeared. And where are our children to find standing room, and the tens of millions of the future a place for wholesome industry? This is an intensely practical question. It is immediate. For within twenty years we must house and employ in some fashion fifty millions of additional population; and by the middle of this century, at a time when the child now born will be in the prime of life, there will be approximately two and a half times as many people in the United States as there are today. No nation in history was ever so confronted with a sterner question than this certain prospect sets before us. What are we to do with our brother whose keeper we are? How are we to provide our own children with shelter and their daily bread?

AMERICAN WASTE OF RAW MATERIAL.

Rational consideration of our potential resources and of available future employment for this great multitude must of course proceed together. Labor must have material to work upon; and labor and material must also be so conjoined that the sum total shall be an increase of product equal to the advancing demands upon it, while at the same time our natural resources shall not be exhausted. Only thus can the future be made safe. Only thus can the people of the years to come be saved from retrogression. We come back to the big fundamental things; to raw materials, and supply and

demand, and the severe utilities without which no nation great or small can long keep poverty and distress or even death at bay. "Of all the sinful wasters of man's inheritance in the earth—and all are in this regard sinners—the very worst are the people of America." These are the words of a great scientific authority, the late Professor Shaler, of Harvard University. This whole nation of presumably busy and serious men has originated many wasteful and extravagant policies; nay, worse, it prides itself upon some of those very records of consumption which establish the astonishing fact of national destruction and waste that cannot be repaired. The mighty wealth of this continent was adequate, with ordinarily provident handling, for an indefinite increase of the demands upon it. The inheritors of this wealth have already so far dissipated it that some prudent care of the residue cannot be postponed without certain disaster.

THE SOURCES OF NATURAL WEALTH.

The summation of actual resources of national wealth is a comparatively short and simple process. Passing over the atmospheric elements that minister indirectly to the national economy, there are just four sources from which mankind must draw all natural wealth. Of these the sea does not supply more than two or three per cent of man's food. It may therefore be dropped from the calculation, as it cannot be made much more largely contributory to human support. The forest, once a rich heritage, is rapidly disappearing. Its product is valuable not for food, but for shelter and as an accessory in the production of wealth. Its fate is interesting here rather in the role of an example. For we have done with our forests already what we are doing just as successfully with the remainder of our natural capital. Except for the areas on the Pacific Coast the forest as a source of wealth is rapidly disappearing. Within twenty years perhaps we shall have nowhere east of the Rocky Mountains a timber product worth recording; and shall then be compelled to begin in earnest the slow process of reforesting.

What is less clearly perceived is that we are wasting in the same fashion other resources which no repentance and no ingenuity can restore or replenish. The exhaustion of the greatest of these, the land, will be spoken of later. Our mineral wealth, however, stands on another plane. What is taken from the mine can never be replaced. Through all eternity, as far as we can see, the consumption of mineral wealth stored in the ground must be a finality. The possible gross product is mathematically limited. The adaptation of this to future uses should be a matter of infinitely greater anxiety than the present balance sheet of a business concern. Yet the singular fact is that among a people convinced that they are grounded in the rudiments of political economy, the progressive exhaustion of this precious resource is everywhere heralded as a triumph of enterprise and a gauge of national prosperity. The nation publishes periodically the record of a scattering of assets never to be regained, and waits with a smile of complacence for general congratulation.

THE EXHAUSTION OF COAL AND IRON.

The two great resources of the under earth, economically speaking, that are indispensable to human comfort and growth, are coal and iron. Our inheritance of these was princely. The most wonderful achievement of this age is the incredible activity with which we are exhausting them. The coal areas and measures of the United States are describable only in somewhat general terms. But the fact of the future is not doubtful. No dependable authority gives more than a century of life to our main available coal supply. It will not be all gone by that time, but the remainder will have to be obtained from deposits of low grade, or at great depths or from points remote from where it is most needed. It will be poor in quality or high in price or both, so that its economic employment on existing terms will be very difficult. A generous estimate of competent geologists for the life of the better coal measures of Europe as a whole is less than one hundred years. The output of the United States is now more than 350,000,000 tons annually. It doubled within the decade from 1895. It now amounts to between forty and fifty per cent of the world's entire supply. The estimated life of the Pennsylvania anthracite fields, whose narrow area has permitted closer approximation, is put at little more than fifty years. The larger supply of soft coal has to answer a demand many times as great. It is certainly a moderate statement to say that, by the middle of the present century, when our population shall have reached the two hundred million mark, our best and most convenient coal will have been so far consumed that the remainder can only be applied at present uses at an enhanced cost which would probably compel the entire re-arrangement of industries and revolutionize the common lot and common life. This is not a mere possibility but a probability which our country must face.

THE IRON SITUATION.

The prospect of the mighty iron interest is even more threatening and more sure. Our available iron deposits have been carefully catalogued. All the fields of national importance have been known for at least twenty years. Within that time their boundaries and probable capacity have been estimated, and the whole country has been prospected for this king of minerals. The most reasonable computation of scientific authority affirms that existing production cannot be maintained for fifty years, assuming that all the available iron ore known to us is mined. In fact, the limitation is likely to be less than that period. In 1870 the United States produced a little more than 3,000,000 tons of iron ore. It increased by about 150 per cent for each decade to 1890. As late as 1895 it was a trifle short of 16,000,000 tons. In 1902 and 1903 it was in round numbers 35,000,000 tons, and last year it rose to about 42,000,000 tons. At this rate, as all the trade statistics indicate, and as our present policy and growth in population require, it will reach 50,000,000 tons almost immediately. By every possible means we are stimulating consumption; especially by a tariff that places a bounty on the exhaustion of the home supply of both coal and iron, thus prohibiting recourse to outside supplies and compelling the exhaustion of our own reserve.

Now, the main iron deposits in this country are those in the Lake Superior region. These furnish nearly or quite three-quarters of the entire product of the United States. Deprived of these our output would shrink to a beggarly ten million tons or so a year. And these deposits are not veins of unknown depth and richness, but moles or pockets of ascertainable volume. There is within reach possibly 1,500,000,000 tons of merchantable iron ore in the deposits of Minnesota, Wisconsin and Michigan. This will keep our industry going, supposing consumption to remain stationary, for thirty or forty years. In the year 1950, as far as our own resources are concerned, will approach an ironless age. For a population of 200,000,000 people, our home supply of iron will have retreated almost to the company of the precious metals. There is no substitute whose production and preparation for practical use is not far more expensive. Not merely our manufacturing industries, but our whole complex industrial life, so intimately built upon cheap iron and coal, will feel the strain and must suffer re-alignment. The peril is not one of remote geologic time, but of this generation. And where is there a sign of preparation for it? Where, amidst our statistical arrays and the flourish of trumpets with which the rise of our manufactured product is always announced, do we hear so much as a whisper of care about the needs of the time marching so swiftly upon us? Instead of apprehension and diligent forethought for the future, the nation is engaged in policies of detail and opportunism.

THE LESSONS OF HISTORY.

If any man think this prophecy of danger fantastic, let him glance at Great Britain. That nation was not so extravagant as we, because it did not compel the instant exhaustion of its resources by a tariff prohibiting such imports, and because its surplus population could and did scatter over the globe. But it has concentrated effort upon the secondary form of industry—manufacturing—at the sacrifice of the primary—the tillage of the soil. Its iron supply is now nearly exhausted. It must import much of the crude material or close its furnaces and mills. Its coal is being drawn from the deeper levels. The added cost pinches the market and makes trade smaller both in volume and in profits. The process of construction has only begun. None is advertising it, only the few understand it. But already there is the cry of want and suffering from every street in England. From a million to a million and a half of men are hovering together in her cities, uttering that most pathetic and most awful ultimatum: "Damn your charity, give us work." And this is only the beginning of that industrial readjustment which the unwise application of industry and the destruction of natural resources must force everywhere. He who doubts may easily convince himself by an honest investigation of the facts that this is no sensational prediction, but something as established and inevitable as an eclipse or the return of the seasons. The most amazing feature of our situation, indeed, is its vast and compelling simplicity.

RELIANCE MUST BE ON THE SOIL.

Every people is thus reduced in the final appraisal of its estate to reliance upon the soil. This is the sole asset that does not perish, because it contains within itself, if not abused, the possibility of infinite renewal. All the life that exists upon this planet, all the development of man from his lowest to his highest qualities, rest as firmly and as unreservedly upon the capacities of the soil as do his feet upon the ground beneath him. The soil alone is capable of self-renewal, through the wasting of the rocks, through the agency of plant life, through its chemical reactions with the liquids and gases within and without it. A self-perpetuating race must rely upon some self-perpetuating means of support. Our one resource, therefore, looking at humanity as something more than the creature of a day, is the productivity of the soil. And since that too may be raised to a high power or lowered to the point of disappearing value, it is of the first consequence to consider how the people of the United States have dealt with this, their greatest safeguard and their choicest dower.

This is pre-eminently and primarily an agricultural country. Its soil has been treated largely as have been the forest and mineral resources of the nation. Only because the earth is more long-suffering, only because the process of exhaustion is more difficult and occupies a longer period, have we escaped the peril that looms so large in other quarters. The reckless distribution of the land; its division among all the greedy who chose to ask for it; the appropriation of large areas for grazing purposes have absorbed much of the national heritage. Only one-half of the land in private ownership is now tilled. That tillage does not produce one-half of what the land might be made to yield, without losing an atom of its fertility. Yet the waste of our treasure has proceeded so far that the actual value of the soil for productive purposes has already deteriorated more than it should have done in five centuries of use. There is, except in isolated and individual cases, little approaching intensive agriculture in the United States. There is only the annual skimming of the rich cream; the exhaustion of virgin fertility; the extraction from the earth by the most rapid process of its productive powers; the deterioration of life's sole maintenance. And all this with that army of another hundred million people marching in plain sight toward us, and expecting and demanding that they shall be fed.

DECLINE IN PRODUCTION.

From 1860 to 1900 is a far cry. In that time our population leaped from 31,000,000 to 75,000,000. In that time a vast area of wilderness was put beneath the plow. Yet in those same years the area of improved land in the North Atlantic States remained stationary. It is now steadily on the decrease. In the South Atlantic States, while the enclosed area is larger, the farming area has decreased by more than 2,000,000 acres. The test of values is still more indicative. Every farm properly cared for should be worth more money for each year of its life. The increase of population and demand, the growth of cities and markets, and the development of diversified farming with density of settlement should assure a large increment. Even where large quantities of new and fertile land are opened, these influences, together with the lowest cost of transportation in the world, should make the growth of values steady. Within the twenty years between 1880

and 1900 the aggregate value of farm lands and improvements, including buildings, declined in every one of the New England and Middle States except Massachusetts alone. The total decrease in values, for these ten states, of the first asset of a civilized people is more than \$300,000,000.

Nor is the attempted explanation by the census bureau of this shrinkage either adequate or convincing. Even the great and fertile state of Ohio, in the Middle West, showed a decline of more than \$60,000,000. This change in the section of oldest cultivation under modern conditions is significant. It is not singular. The soil of the South is moving on the same decline, though the fact is less obvious in the total change of agricultural conditions since the Civil War. On the new lands of the West, where once the wheat yield was from twenty to thirty bushels per acre, it is now from twelve to eighteen. Frankly, and without shame, this is attributed to the "wearing out" of the soil, as if the earth were a garment that must be destroyed by the wearing. If the earth, the mother of humanity, is to "wear out" what is to become of the race? The fact is that soils properly treated maintain their productiveness indefinitely under cultivation. The further fact is that, with the disappearance of pestilence and the discontinuance of war that belong to the future, all contributing to the growth of population, the productive capacity of the soil must be sustained at its highest point or the world suffer want.

PROCESSES OF SOIL DEPLETION.

The life sustaining power of the soil is lowered in two ways: first by physical destruction, through the carrying away of the earth to the sea; and second, chemically, by the withdrawal of the elements required for plant life. The waste from the former cause is very great. It accounts for sterility in the older, which are also the more hilly, portions of the cultivated country. It may easily be checked or prevented. The agriculture of Japan, which is one of the highest type, preserves a mountain farm intact by terracing and careful modulation of its level. Professor Shaler says that a field lying at an angle of twenty degrees can be totally destroyed in a hundred plowings. Throughout the South this process of denudation has proceeded far and is going forward rapidly. He estimates from personal observation that in the state of Kentucky, which has not been largely cultivated for more than a century, one-tenth of the arable soil has been destroyed and that a considerable portion of this cannot be restored by any application of industry and care.

More serious and even more universal and speedy is the process of deliberate soil exhaustion. New England once supported a population of farmers whose shot was heard around the world. Prof. Carver, of Harvard, after a tour of 550 miles on horseback last year, records his conclusion that "agriculture as an independent industry, able in itself to maintain a community, does not exist in the hilly parts of New England." It is not many years since the favored wheat-producing areas of the American northwest gave a yield of from twenty-five bushels per acre upwards. Now an average of twelve to fifteen is accepted as satisfactory. Under the stress of need, by intelligent cultivation, many of the lands of Great Britain, cropped for a thousand years, are made to bear thirty bushels to the acre. The rich deep soil of our own country, drawn upon for a few decades, produces about twelve. The same ratio holds good of other cereals and of every product of the field. The

sea islands that once grew the most famous cotton staple in the world are virtually abandoned. The people have neglected the preservation of the soil. They take away all and give nothing back.

Thorough fertilization of the land has no place in the general work on the American farm. Average American agriculture means the extraction from nature of the greatest immediate return at the lowest possible outlay of labor or money, with sublime disregard of consequences. Except at scattered experiment stations and in isolated instances there is little done in the United States towards farm economies. Scientific adaptation of soil to product, intelligent rotation of crops, diversification of industry, intensive farming constitute the rare exception and not the rule. Only two states in the Union show an average total value of farm products in excess of thirty dollars per acre of improved land. The figure for Illinois in 1900 was \$12.48; for North Carolina \$10.72; for Minnesota \$8.74. By proper cultivation these returns could easily be doubled and still leave the soil's resources unimpaired. The doubling of all products of the farm would add to the wealth of this country from five to six billion dollars every year, according to the crop yield of the season and the range of market prices. Therefore, and this is the focal point of the whole matter, the country is approaching the inevitable advent of a population of one hundred and fifty, or two hundred millions, within the lifetime of those now grown to man's estate, with a potential food supply that falls as the draft upon it advances. How are these people to be fed?

OUR EXPORT TRADE.

The foreign trade of the United States has been made an object of more or less solicitude and self-gratulation. What we do is to export in immense volumes two great schedules of commodities. One contains raw materials, the products of the upper and the under earth. It includes, adding articles like flour, provisions and refined oil (which are but one degree removed from the raw state, changed in form for economy of transportation), three-fourths of our entire exports of domestic commodities. The treasury of our future is being deposited to swell the rapidly growing riches of the day. The remaining thirty per cent or less, which is all that can properly be classed as products of manufacture, is this stored treasure in another form. Exports of domestic manufactures, construing the term with proper strictness, constitute a trifle more than twenty per cent of the total. This pitiful showing in the markets of the world where our people might find occupation, where a larger proportion of them must find it in the future if all are to survive or remain, a showing that not even the endeavors of boasters can improve, is the inevitable consequence of a policy more destructive than that of the spendthrift. Lest the conditions of life should be made too favorable for this people its home markets are surrendered, bound rigidly by law, to the comparatively small number who control domestic supplies of raw material for manufacture. At the same time the cost of production effectually prevents the securing of any considerable or permanent control in the markets of the outer world, where alone our millions of tomorrow could find outlet for this form of their activity.

THE RECLAMATION LAW.

The single intelligent advance on practical lines made by public authority within the last quarter of a century is the reclamation law. Initiated and inspired and paid for by a few western railway companies, it provides for a real addition to the sources of food supply and the opportunity for employment. But it is only a light breeze blowing in the face of a cyclone. If every project contemplated as feasible were executed, and if all were completed instantly by the rub of a magic lamp, some sixty million acres would be added to the arable national domain. And if only forty acres of this were assigned to each family, it would supply the needs of the actual addition to population, by natural increase and by immigration, for less than three years.

SERIOUS STUDY DEMANDED.

Professor Shaler, in a survey of world conditions from the broadest scientific point of view, looking at man and his storehouse in the large, at supply and exhaustion, says, in "Man and The Earth":

"This attitude of men as regards the future of the material value of the earth notably contrasts with what they hold to the moral and political future of their kind. A large part of their thought and endeavor goes to that group of problems, but practically none at all to the immediate questions that relate to the material foundations on which all the higher development of the life of their kind has to rest."

Man may win, beyond peradventure man will win from the silent willingness of nature, from her sternness and her clemency, from her outpouring and her withholding, the utmost of his aspiration. But the highway to the perfect condition must be fashioned from the common clod under his feet. And for every error and omission he must pay the uttermost farthing. It is not so much at this point a question whether it is to be our people or another who win to higher ideals of life, of government and of conduct, as it is whether they are to escape the shock of an awakening that must leave them face to face with the old struggle for existence, with weakened moral fiber and profound discouragement. Certain it is that the time has come for setting our household in order, and creating a serious study of national activity and economy according to a truer insight and a more rational mood.

The first step is to realize our dependence upon the cultivation of the soil. To this end all that has been said thus far is contributory. The next will be to concentrate popular interest and invention and hope upon that neglected occupation. We are still clinging to the skirts of a civilization born of great cities. We at this very moment use a slang which calls the stupid man "a farmer." Genius has shunned the farm and expended itself upon mechanical appliances and commerce and the manifold activities whose favorable reactions filter back but slowly to the plot of ground upon which stands solidly the real master of himself and of his destiny. If we comprehend our problem aright, all this will change; and a larger comprehension of agriculture as our main resource and our most dignified and independent occupation will for the future direct to their just aim, in the improvement of methods and the increase of yield, the wisdom and the science and the willing labor of the millions who thus may transmit to posterity an unimpaired inheritance.

OUR INSUFFICIENT AGRICULTURE.

Agriculture, in the most intelligent meaning of the term, is something almost unknown in the United States. We have a light scratching of the soil and the gathering of all that it can be made to yield by the most rapidly exhaustive methods. Except in isolated instances, on small tracts here and there farmed by people sometimes regarded as cranks, and at some experiment stations, there is no attempt to deal with the soil scientifically, generously or even fairly. In manufactures we have come to consider small economies so carefully that the difference of a fraction of a cent, the utilization of a by-product of something formerly consigned to the scrap heap, makes the difference between a profit and bankruptcy. In farming we are satisfied with a small yield at the expense of the most rapid soil deterioration. We are satisfied with a national average annual product of \$11.38 per acre, at the cost of a diminishing annual return from the same fields, when we might just as well secure from two to three times that sum. Here is a draft which we may draw upon the future and know that it will not be dishonored. Here is the occupation in which the millions of the future may find a happy and contented lot.

THE POSSIBILITIES OF AGRICULTURAL DEVELOPMENT|

When we have added to the national export trade half a billion dollars per annum, the country rings with self-congratulation, and we demand the plaudits of the world. If a process for extracting metallic wealth from rocks were to be discovered tomorrow, such as to assure the country an added volume of a billion dollars in wealth every year, the nation would talk of nothing else. Yet these things would be but a trifle when compared with the possibilities of agricultural development in the United States. The official estimated value of all farm products of the country last year was \$6,415,000,000. Discount this for high prices and generally favorable conditions by twenty per cent, and over \$5,000,000,000 remains. It is also officially recorded that of the appropriated farm area of the United States a little less than one-half is under cultivation. Utilize the other half and, without any change whatever in method, the output would be practically doubled. Change methods only a little—not to high class intensive farming, but to an agriculture as far advanced as that of those other countries which have made the most progress—and without any addition whatever to the existing cultivated farm area the product per acre would be doubled. We should be able, by directing surplus population to the land, and by the adoption of a system of culture in full operation elsewhere greatly to increase this minimum present yield of \$5,000,000,000 per annum of farm products. That is, we may add \$10,000,000,000 or \$15,000,000,000 every year to the national wealth if we so choose. And this is but a beginning.

INCREASED YIELDS IN BRITAIN.

It will be well in defense of a prospect so promising to glance at the achievements of other peoples upon whom necessity has already imposed wisdom. It is perhaps not as generally known as it should be that Great Britain, with a soil and climate far inferior to our own for wheat growing, produces more than double the quantity that we do per acre. The average

for the United States in 1899 was twelve and three-tenths bushels per acre. In 1904 it was twelve and five-tenths. That is about the figure for a long series of years. More than half a century ago the average yield in England had risen above twenty-six bushels to the acre. In the latter part of the eighteenth century agriculture had reached almost its lowest estate in the United Kingdom. Men who saw then as we should see now the paramount importance of its restoration devoted themselves to its advancement. Arthur Young made the completest study of local conditions ever attempted. Statesmen were interested and men of science enlisted. A board of agriculture was created in 1793. Sir Humphrey Davy delivered before it in 1812 a series of remarkable lectures on scientific agriculture. Landed proprietors took up the cry, interest was invoked everywhere. New theories were put into practice almost as rapidly as the commons were inclosed, and between 1770 and 1850 there was an immense rise in production, in laborers' wages and in rents. Although agriculture in England has suffered in the last twenty-five years by the opening of new land in America and the cheapening of the world's transportation, it has profited by further advances in knowledge. Today a yield of thirty bushels of wheat per acre is about the average for the country. In Minnesota, with her fresh soil and unrivalled product, an average of fourteen bushels is looked upon with complacency. The average of Great Britain, applied to the acreage in this country, that now gives us something over 600,000,000 bushels of wheat in a fair year, would increase our product to over 1,500,000,000 bushels.

GERMANY'S YET BETTER RECORD.

There are more instructive studies in national efficiency than this. The German Empire has nearly 60,000,000 people compressed within a little more than 200,000 square miles of territory. She has not tied her fortunes to a single interest. Her manufacturing industries are thrusting themselves into the markets of every country. How to meet German competition is today the study of every intelligent leader of industry and every cabinet on the continent of Europe. It will be found that a large share of her world-wide success is due to symmetrical national development. Agricultural industry has not been slighted. Behold a contrast that throws light upon the idle hosts of England's unemployed, marching despondently through the streets whose shop windows are crowded with wares of German make. Between 1875 and 1900 in Great Britain 2,691,428 acres which were under cereals and 755,255 acres which were under green crops went out of cultivation. In Germany during the same period the cultivated area grew from 22,840,950 to 23,971,573 hectares, an increase of five per cent; and the area given over to grass shrank one-third. While her foreign trade was making the great leap from \$1,800,000,000 to \$2,650,000,000, the yield of her cultivated fields per hectare made the following advances, measured in kilogrammes: Wheat, from 1,670 to 1,970; rye from 1,490 to 1,650; barley from 1,480 to 1,950; oats from 1,070 to 1,840; and hay from 2,230 to 4,450. The wages of agricultural laborers rose about twenty-five per cent between 1873 and 1892 and have advanced another twenty-five per cent since then. This is the work of intelligence, of a complete appreciation of the national problem as a whole, of universally practical and technical education and of infinite patience. To agriculture as well as to other occupation will apply to conclusion reached by Prof. Dewar after a study of German industry and progress as a whole.

"The really appalling thing is not that the Germans have seized upon a dozen industries, but that the German population has reached a point of general training and specialized equipment and possesses a weapon of precision which gives her an enormous initial advantage."

JAPAN A SCHOOLMASTER IN AGRICULTURE.

For half a century Japan has been studying and assimilating the best to be found in the world. Japan is a world's university for instruction in the art of agriculture. Her national greatness is not merely built upon that, it grows out of that as the grain itself springs from the soil. Of her 45,000,000 people, 30,000,000 are farmers. The whole body is supported by a cultivated area of but 19,000 square miles. Every foot of soil is utilized; the farmer is a specialist. For twenty-five centuries this people has turned to tillage as the basic industry of life. Her progress is in the right direction, growth like that of the tree, from the ground up. The message of the victorious guns of Japan is a reminder of the fixed order and proportion in a healthy national development of industry. No nation that does not throw its intensest interest and expend the bulk of its force upon the cultivation of the soil can become or remain permanently great.

FRANCE THE BANKER NATION.

In France a careful system of agriculture took root earlier than in Great Britain, and from it has been wrought a far stronger fabric of national prosperity. France is today the banker nation of Europe. Any sound loan can be placed in Paris on short notice. In 1871 impoverished France was compelled to pay \$1,000,000,000 to the conquering Germans. Thirty years afterward France had \$500,000,000 seeking for investment. Today her national debt of \$6,000,000,000 is practically all held at home, and her holdings of foreign securities are not far from \$15,000,000,000. She controls the purse strings of Europe and Russia and Germany are guided in their foreign policies, are urged into or restrained from war, not so much by the pleasure of emperor, king or kaiser as by the decision of the world-financiers of France.

The funds for this international financing are obtained largely from the savings of the industrious and frugal small farmers of France. Within the first fifty years of the nineteenth century agricultural improvement alone doubled the wealth of the country. Landed estates sell today for from three to four times as much as they brought at the time of the revolution. The valley of the Loire is one great garden. Every foot of soil has been studied and devoted to the growing of what will produce the largest return. Although one-third of the area of the country is classified as uncultivable, the tilled portion yields food enough for one hundred and seventy inhabitants per square mile. Kropotkin says, in his remarkable study of agricultural methods:

"Some thirty years ago the French considered a crop quite good when it yielded twenty-two bushels to the acre; but with the same soil the present requirement is at least thirty-three bushels; while in the best soils the crop is good only when it yields from forty-three to forty-eight bushels, and occasionally the product is as much as fifty-five bushels to the acre."

From limited areas on experimental farms under special care as high as eighty bushels per acre has been obtained. But, taking cultivation as we find it for the country as a whole, the French now draw from the soil more than five times as much wealth as they did a century and a half ago. This is the result merely of the common agricultural industry of France. The strength of the nation, its endurance of political changes, its economic place and its persistence as a wealth creator are due primarily to the fact that it is a nation of small farmers, pursuing what in this country would be called intensive but what is really diversified farming.

SUPREME ACHIEVEMENT IN BELGIUM AND JERSEY.

It is to Belgium and the Island of Jersey that we must look if we would see the supreme achievement of careful farm industry exercised under conditions not specifically favorable. The agriculture of these countries represents a fair average of what the people of any other might do, with equal patience, intelligence and industry. Originally the soil of Belgium as a whole was not highly favorable to cultivation. Yet Belgium produces now, after allowing for all imports of food products and exclusive of exports of the same, enough home-grown food to supply the wants of 490 inhabitants to the square mile. This is in addition to the large manufacturing industries of the country, and offers a fair model and measure of what might be done under ordinary conditions with the earth by man in any part of the world not cursed by sterility.

THE LESSON FOR THE AMERICAN FARMER.

These figures, which in reality supply the answer to our problem, convict the American farmer of carelessness and want of knowledge, and the economic and political leaders of the people of unfaithfulness to their trust. To restore and maintain the fertility of the soil, to assure food and occupation for a greater population than may be expected in a long future, we have but to study the experience of older peoples and to follow lessons written plainly in the history of the world's agriculture.

There are three essentials to any agriculture worthy of the name. The first is rotation of crops. Our low average yield is due to the antiquated system, all too prevalent, of raising the same crop indefinitely on the same land, until it has been worn out or so reduced that the owner is in danger of poverty. Even without fertilizers, the yield of a given area may be immensely increased and its productive diversion preserved from exhaustion merely by the restorative variety of change which seems to be a law of all living things. Some interesting facts have been brought out by the work of the Minnesota State Agricultural School. With only ordinary fertilization, and with such farm culture as could be applied to large areas, the average yield of wheat on the plots under experiment for seven years was 26.4 bushels per acre; of oats 67.2 bushels; of corn 42.8 bushels, and of hay the average for five years was 3.91 tons per acre. This was accomplished merely by using a system of five year rotation; the land being treated in this order: corn, wheat, meadow, pasture, oats. The figures given are nearly double the average yield from the farms of the State. There is therefore no exaggeration in the statement that our farm produc-

tion could be made two-fold what it is by the mere application of more careful methods without any intensive cultivation whatever. If the lands of the state were cultivated according to a seven year system of rotation—grain, grain, grass, pasture, grain, oats, grain—without fertilizers, it is estimated on good authority that the same amount of grain would be gathered during the four seasons in which it appears in this regular order as is now obtained from cropping grain every year. That is to say, the farmer would obtain at the end of seven years exactly the same amount of grain that he now takes as the entire product of his fields; while in addition he would have the whole amount of other crops and of stock for which the three seasons of vacation from grain growing would furnish opportunity. He would, while preserving the fertility of his acres and guarding against soil deterioration, add three-sevenths to the volume of his material profits. Such is the promise of the simplest of all improvements in method.

MAINTENANCE OF FERTILITY THROUGH STOCK FARMING.

This is but the beginning of agricultural possibilities. Calling in the aid of the second method of increasing yield and preserving soil productivity, which is a more liberal use of fertilizing material, such as is possible where farms are of small size and cattle are kept, there is abundant evidence of the extraordinary results that may be obtained. Illustrations may be found in every part of the country where individual small farmers have had the intelligence to put the system into effect. A recent report of the department of agriculture cites the case of a farm in Pennsylvania which was so exhausted as to be incapable of production. This little tract of fifteen acres, devoted strictly to dairying and treated each year with every particle of the natural fertilizers thus obtained, produces a revenue of about \$3,000 or \$200 per acre annually. There is no secret in the process, just as there is no uncertainty in the result. And by a combination of judicious crop rotation which admits and requires diversification of farm industry, with careful fertilizing, the estimate of a double money value for the yield of the present farm area of the United States would be found under the mark.

GREAT YIELDS FROM INTENSIVE TILLAGE.

The third factor in improvement, better tillage, is most interesting of all because it opens up unmeasured possibilities. We no more know what is the maximum food-bearing capacity of the earth or of any small portion of its surface than we do the rate at which people may be able to travel a century from now. But what has been done is sufficiently startling. It has been seen that a population of 45,000,000 people in Japan is supported on 19,000 cultivated square miles, aided by the food products obtained from the sea. This is because cultivation in Japan is truly intensive; that is, it is no longer even highly developed farming, but market gardening. As we approach that science, the actual creation of soils for growing purposes, the shelter of plants from frost and unfavorable elements, and the treatment of grains and vegetables by separate planting and individual nurture, all limitations upon earth's bounty appear to recede afar. From two and seven-tenths acres in the suburbs of Paris there have been

grown in a single season 250,000 pounds of vegetables. A market gardener of Paris declares that all the food, animal and vegetable, required for the 3,500,000 people of two great departments could be grown, by methods already in use, on the 3,250 square miles of gardens surrounding the city. Thus, while it appears that in Belgium a population of approximately five hundred persons to the square mile can subsist on the products of farm industry alone, this figure, by high intensive culture such as becomes possible and profitable where population is extremely dense, might be more than doubled.

In one district of East Flanders a population of 30,000 peasants obtains its food from 37,000 acres of ground, at the same time raising thousands of beasts and exporting considerable produce. The farmers of the Island of Jersey, by no means a paradise for the agriculturist, manage to obtain an annual agricultural produce valued at about \$250 from each acre of their land. In Germany they have produced thirty tons of potatoes to the acre. The same has been done in Minnesota, and might become the rule rather than the exception.

WONDERFUL YIELDS FROM SEPARATE PLANTINGS.

The Japanese obtain their wonderful yields of rice, from twenty to thirty-two bushels per acre in poor provinces and sixty to sixty-seven bushels on the best land, by separate planting. After the plant has been started in a bed it is taken up individually and transferred to the field by hand. Interesting experiments have been made in the United States with wheat. If the best seed be selected and planted, and a vigorous young plant be grown four inches distant from its nearest neighbor, it is possible with the most prolific varieties and the utmost care to produce as high as 1,500 grains of wheat from a single grain. A yield of 100 grains would be a practical minimum. This would give 100 bushels of crop for every bushel of seed; a multiplication now deemed incredible. By this method from 62 to 90 bushels of wheat to the acre have actually been obtained. The objection to the amount of labor required may be answered by the query whether it would be more difficult to grow ten acres after this fashion than a quarter section in the old way. And the food demand of a population growing by millions is soon to force such questions to the front.

Even if the soil produces only the thirty bushels to the acre of wheat which Great Britain can raise, a square mile would grow 19,200 bushels. If 500 persons were living on a square mile it would allot each one of them 38.4 bushels as a supply. Distribute this in terms of any measured food ration, and it will not be inadequate, of this brief investigation of soil preservation and development, that the possibilities of agriculture make it difficult to set any specific limit to the population that could sustain life on the produce of a given area. This however presupposes cultivation as carefully studied and applied as are the details of manufacturing processes or the manipulations of a chemical laboratory. Such must be the ultimate goal of American industry. And although the American farmer need not yet become a market gardener, it is time to make a beginning of better methods.

OUR POSSIBILITIES EQUAL ALL DEMANDS.

From the review given of actual accomplishment in treatment of the soil from the promise of this most dependable asset, something may be asserted with confidence of our own future. It can be shown that an average of two persons or more may be supported on every acre of tillable land by the highest form of intensive farming. But dismissing this as unnecessary, it has been shown that a people like those of Bedgium today—not an Oriental race accustomed to a standard of living and of labor inapplicable to us, not living in virtual serfdom like that of Russia, but an industrious, fairly intelligent and exceedingly comfortable agricultural community—raise from the soil food enough for the needs of 490 persons to the square mile. Adopting provisionally that ratio as a point of departure, though the actual ratio of area to population gives a figure considerably higher even than this, the 414,498,487 acres of improved farm lands in the United States on the date of the last official report, an area materially enlarged by the present time, would support in comfort 317,350,405 people; enabling them at the same time to raise considerable food for export and to engage in necessary manufacturing employments. Applying the same ratio to the entire acreage of farm lands within the United States, both improved and unimproved, which was at the same date 838,591,774, the population indicated as able to live with comfort and prosperity on the actually existing agricultural area of this country, under an intelligent system and a fairly competent but by no means highly scientific method of culture, rises to 642,046,823.

The conclusion is that, if not another acre were to me redeemed from the wilderness, if the soil were treated kindly and intelligently, and if industry were distributed duly, and popular attention were concentrated upon the best possible utilization of the one unfailing national resource, there would be produced all necessary food for the wants of, in round numbers, 650,000,000 people. But this means such study and labor to raise production to its highest terms as have entered scarcely at all as yet into the American comprehension.

THE PROBLEM CONFRONTING US.

Failing to understand the needs of the hour or to appreciate the moral to which they point, what fortune must await us? Within twenty years 125,000,000 people, and before the middle of the century over 200,000,000, must find room and food and employment within the United States. Where are they to live? What are they to do? By that time our mineral resources will have been so nearly exhausted that the industries related to them must fall into a minor place. By that time it is apparent that our dream of a conquest of world markets will be a bursted bubble. Mr. Harold Bolce has demonstrated that the people of the Orient, the hundreds of millions of Japan and China, with their imitative quality; their proved ability to operate modern machinery and to create it in their workshops after once using it; their enormous supply of coal and iron; their limitless cheap labor and their patience like that of Fate, are prepared to control the markets of the future. They must control as against a policy which has established domestic conditions in manufacturing business, on lines which make pro-

duction so expensive an affair that we could not hope to meet the mechanic of Germany on even terms and must retire before the despised Chinaman.

It is a mathematical fact that within twenty years under present conditions our wheat crop will not be sufficient for home consumption and seed, without leaving a bushel for export. Will these coming millions go into the factories? But where can we then expect to sell shop products in a world of competition, and who will furnish the payrolls? All industry stops when these are not forthcoming. That is the dead-wall against which England stands dismayed. The shops are there, the workingmen are there clamoring for employment, but capital can find no profit in the enterprises, nobody offers to advance money for the payrolls of unprofitable business, and a topheavy industry must surely fall.

Let us be warned in time. On every side there is menace if our nation actively be not reorganized on the basis of the old-fashioned common sense. The safety valve for older peoples has been found in emigration. Their very relief has contributed to our danger. The United States cannot follow their example. It is against the genius of our people, and besides, the circle of the northern hemisphere is closed. At home the problem must be worked out, and its terms have been clearly stated.

AN IMPERATIVE NATIONAL DUTY.

The conclusion reached points out and emphasizes a national duty so imminent and so imperative that it should take precedence of all else. It is the foe that has overthrown civilizations as proud, as prosperous and far more strongly fortified than our own. Nothing can stop the onward march of nature's laws or close the iron jaws of her necessities when they open to crush their victims. Either we shall understand our situation and make such provision as her benignancy affords to meet it, or we shall meet conditions of overcrowding and artificial standards and food and employment inadequate to the national needs, and so be in danger of destroying the stately temple once reared with the highest hopes that ever animated humanity. Which is it to be?

AGRICULTURE MUST BE PLACED IN THE FOREFRONT.

If we are to walk safely in the way of wisdom there is much to be done. It is time to begin. There must be, first, a return to conservative and economic methods, a readjustment of national ideas such as to place agriculture, and its claims to the best intelligence and the highest skill that the country affords, in the very forefront. There must be a national revolt against the worship of manufacture and trade as the only forms of progressive activity, and the false notion that wealth built upon these at the sacrifice of the fundamental form of wealth production can endure. A clear recognition on the part of the whole people, from the highest down to the lowest, that the tillage of the soil is the natural and most desirable occupation for man, to which every other is subsidiary and to which all else must in the end yield, is the first requisite.

Then there will be a check administered to the city movement that lowered the percentage of agricultural labor to the whole body of persons engaged in gainful occupations in the United States from 44.3 in 1880

to 37.7 in 1890 and to 35.7 in 1900. With public interest firmly fixed upon the future, the country in mere self-preservation must give serious attention to the practical occupation of restoring agriculture to its due position in the nation. The government should establish a small model farm on its own land in every rural congressional district, later perhaps in every county in the agricultural states. Let the Department of Agriculture show exactly what can be done on a small tract of land by proper cultivation, moderate fertilizing and due rotation of crops. The sight of the fields and their contrast with those of its neighbors, the knowledge of yields secured and profits possible, would be worth more than all the pamphlets poured out from the government printing office in years. The government ought not to hesitate before the comparatively small expense and labor involved in such a practical encouragement of what is the most important industry of our present and the stay and promise of our future. Disseminate knowledge of farming as it should and must be, instead of maintaining the pitiful bribe of a few free seeds. Declare everywhere, from the executive chamber, from the editorial office, from the platform, and above all from every college classroom and from every little schoolhouse in the land, the new crusade. Let the zeal for discovery, for experiment, for scientific advancement that have made the last century one of multiplied wonders focus themselves upon the problems of the oldest of sciences and arts; the corner-stone of all civilization; the improvement of tillage and making to grow two grains where only one grew before. Only thus may a multiplying population secure its permanent maintenance. Only thus, may the struggle for existence that has power either to cure or bless be brought to any other termination than the peace of death.

THE FIRST AND LAST RESOURCE OF MAN.

I have not drawn upon fancy for a single detail of this picture. This growing increase of population, its rise to over 200,000,000 before 1950, the approaching exhaustion of much of our mineral wealth, the vanishing of our public domain, the deterioration of our soil, the terrible need which these must bring, the strain on institutions and the stress of industrial perplexity or decline are as certain as the passage of the years. I have given you the facts drawn from authentic sources, and in every case under rather than over-stated. Let them be examined, criticised, compared with official records. For this is not a controversy about theories, but a plain statement of natural facts in the light of nature's laws. Then let the statesmen, the writers, the thoughtful workers of today, say if they are not true. If true, what are we to do? Where, save in a concentration of national effort upon the first and last resource of man ever since he left Eden, is there a sure escape and a safe relief? Let the leaders of men give their answer.

OUR CHILDREN'S FORTUNES MAY BE MADE SECURE.

The situation is not at all hopeless or even desperate if the nation turns to its task with appreciation, with wisdom and with courage. The saving qualities of the American people are intelligence, adaptability and patriotism. Given a situation, simple or complex, demanding sacrifice or promising reward, they are quick to comprehend it and to mobilize their forces for its mastery. If they turn with comprehension of their situation manfully to the most vital work of the present our children's fortunes may be made secure. Instead of a world filled with human beings struggling against advancing necessity, instead of the grim choice between the slow but sure decline to an ever lowering scale of comfort, there appears a beautiful conformity to nature's order and the blessing of service to her law. This country may easily become what its people love to boast, the happiest and most favored portion of the earth, the sure refuge and defence of the destitute and oppressed, because of its mighty heritage of that one resource which may enjoy increase and replenishing as the ages roll by.

This is not the conception of a new Arcadia or a return of the golden age. Industry will sufficiently diversify itself, once the order of it is rescued from a false appreciation and restored to that found on nature's roll of honor. In the last census year the value of agricultural products was less than \$5,000,000,000. But the farm products of that year devoted to manufacturing uses were valued at \$2,679,000,000; the product of the industries using these materials was \$4,720,000,000; and in these industries, capitalized at over \$4,000,000,000, there were 2,154,000 persons employed. A profitable husbandry is the very fountain from which all other occupations flow and by which they are nourished into strength. A symmetrical development of industry is by no means the least important reward of a readjustment of industrial occupations and interest in harmony with their real relation to man and his active life upon this planet. Not lessened but enhanced and greatly varied industry in the end will follow the rearrangement and restoration of industrial values.

EARTH OFFERS WORK AND ABUNDANT REWARD.

Now as ever, to the nation and race as to the individual, nature, the unrelenting taskmistress of the centuries, holds out in one hand her horn of plenty and in the other her scourge. This country has brought itself within reach of the thong, while grasping at the satisfaction of present appetite and forgetting the primal relation between the earth and man. The path to prosperity is still open. The divinity of the earthly life at heart is kind. Under her rule there is work and abundant reward for all, but these must be won in her designated way and in none other. Her pointing finger, that has never varied since man came upon the earth, shows the old and only way to safety and honor. Upon the readiness with which this is understood, the sober dignity with which a whole nation rises

to the winning of its broad and permanent prosperity, will depend the individual well-being of millions of this and many generations. Largely by this method will posterity, our fit and righteous judge, determine whether what issues from the crucible of this twentieth century is a bit of rejected dross to be cast aside or a drop of golden metal to shine forever upon the rosary of the years.

PREMIUMS AWARDED

DIVISION A—HORSES AND MULES.

Premiums awarded \$2,859.00

Superintendent—G. W. Patterson, Worthington.
 Assistant Superintendent—O. N. Tupper, Worthington.
 Judge Light Horses—Walter Palmer, Ottawa, Ill.
 Judge Draft Horses—G. C. Humphrey, Madison, Wis.

Class 1—Trotting Strains, Standard Bred and Registered.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, 4 years or over—					
J. R. Peak & Son, Winchester, Ill.....	\$25.00				
Thos. Irvine & Son, St. Paul.....	20.00				
John Casey, St. Paul.....		15.00			
J. R. Peak & Son, Winchester, Ill.....			10.00		
H. M. Hills, Little Falls.....				5.00	
Stallion three years old and under four—					
Thos. Irvine & Son, St. Paul.....	20.00				
J. R. Peak & Son, Winchester, Ill.....		15.00			
G. W. Sherwood, St. Paul.....			5.00		
Stallion, two years old and under three—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
Joe Ramsden, Minneapolis.....		10.00			
Wm. F. Guertin, Minneapolis.....			5.00		
Stallion, one year old and under two—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
Mare, four years old or over—					
J. R. Peak & Son, Winchester, Ill.....	20.00				
Wm. F. Guertin, Minneapolis.....		15.00			
Mare, three years old and under four—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
G. W. Sherwood, St. Paul.....		10.00			
Thos. Irvine & Son, St. Paul.....			5.00		
Mare, two years old and under three—					
C. E. Dinehart, Slayton	15.00				
Thos. Irvine & Son.....		10.00			
J. R. Peak & Son, Winchester, Ill.....			5.00		
Mare, one year old and under two—					
J. R. Peak & Son, Winchester, Ill.....	15.00				

SWEEPSTAKES.

Stallion of any age—	
Thos. Irvine & Son, St. Paul.....	30.00
Mare, or filly any age—	
C. E. Dinehart, Slayton.....	20.00

Class 2—Saddle Horses.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, three years old or over—					
W. G. Carling, St. Paul.....	\$25.00				
Gelding, three years or over—					
Mrs. Geo. E. Leach, Minneapolis.....	25.00				
Mr. Geo. E. Leach, Minneapolis.....		15.00			
Mare, three years or over—					
O. J. Mooress, Columbia, Mo.....	25.00				
Battery Riding Club, Minneapolis.....		15.00			
Combined harness and saddle—any age or sex to be driven and then ridden—					
W. G. Carling, St. Paul.....	30.00				
O. J. Mooress, Columbia, Mo.....		20.00			
G. E. Leach, Minneapolis.....			10.00		

Park, Hack, Walk, trot and canter.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Mare or gelding any age, under saddle—					
O. J. Mooress, Columbia, Mo.....	\$25.00				
M. F. Erickson, Minneapolis.....		15.00			
J. M. Stevens, Glenwood.....			10.00		
High school class—					
O. J. Mooress, Columbia, Mo.....	25.00				
Jennie M. Crooks, St. Paul.....		15.00			

Class 3—Harness Horses, American or Foreign Bred.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Matched heavy carriage or coach team, sixteen hands or over—					
Jas. E. Moore, Mason City, Iowa.....	\$25.00				
J. R. Peak & Son, Winchester, Ill.....		20.00			
Matched light carriage team, must be fifteen and under sixteen hands—					
W. G. Carling, St. Paul.....	25.00				
J. R. Peak & Son, Winchester, Ill.....		20.00			
Matched roadster team, must be fourteen and one-half hands or over—					
J. R. Peak & Son, Winchester, Ill.....	25.00				
Appointments—Turnouts. Fair mares or geldings—					
W. G. Carling, St. Paul.....	25.00				
J. R. Peak & Son, Winchester, Ill.....		20.00			

Class 4—Harness Horses.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Single heavy carriage mare or gelding, must be 16 hands high—					
J. R. Peak & Son, Winchester, Ill.....	\$20.00				
O. J. Mooress, Columbia, Mo.....		15.00			
Single roadster, mare or gelding, must be 15 hands or over—					
W. G. Carling, St. Paul.....	20.00				
O. J. Mooress, Columbia, Mo.....		15.00			
J. R. Peak & Son, Winchester, Ill.....			10.00		
J. R. Peak & Son, Winchester, Ill.....				5.00	

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Appointments, Turnouts. Mare or gelding, any age, 15 hands or over, driven to spider phaeton, stanhope, buggy or trap, by owner—					
W. G. Carling, St. Paul.....	20.00				
O. J. Mooress, Columbia, Mo.....		15.00			
J. R. Peak & Son, Winchester, Ill.....			10.00		

Draft Horses.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Pair, heavy draft, weighing 3,500 pounds or over—					
L. W. Cochrane, Crawfordville, Ind.....	\$20.00				
Barrett & Zimmerman, Merriam Park..		15.00			
Pair, light draft, weighing not less than 3,000 pounds—					
L. W. Cochrane, Crawfordville, Ind.....	20.00				
Barrett & Zimmerman, Merriam Park....		15.00			

Class 5—American, English and German Coach; Hackney not Included.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, four years old or over—					
J. R. Peak & Son, Winchester, Ill.....	\$25.00				
J. R. Peak & Son, Winchester, Ill.....		20.00			
Stallion, three years old and under four—					
J. R. Peak & Son, Winchester, Ill.....	20.00				
Stallion, two years old and under three—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
J. R. Peak & Son, Winchester, Ill.....		10.00			
Stallion, one year old and under two—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
Mare, four years old or over—					
J. R. Peak & Son, Winchester, Ill.....	20.00				
Mare, three years old and under four—					
J. R. Peak & Son, Winchester, Ill.....	20.00				
Mare, two years old, and under three—					
J. R. Peak & Son, Winchester, Ill.....	15.00				
Mare, one year old and under two—					
J. R. Peak & Son, Winchester, Ill.....	15.00				

SWEEPSTAKES.

Stallion, any age—	
J. R. Peak & Son, Winchester, Ill.....	20.00
Mare, any age—	
J. R. Peak & Son, Winchester, Ill.....	20.00

Class 6—French Coach and Hackneys, Pure Bred.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, four years old or over—					
McLaughlin Bros., St. Paul.....	\$25.00				
McLaughlin Bros., St. Paul.....		20.00			
B. F. Cox, Bloomer, Wis.....			15.00		
Burgess & Lukyn, Mankato.....				10.00	
Stallion, three years old and under four—					
McLaughlin Bros., St. Paul.....	20.00				
McLaughlin Bros., St. Paul.....		15.00			
McLaughlin Bros., St. Paul.....			5.00		

AGR-15

SWEEPSTAKES.

Stallion, any age—

McLaughlin Bros., St. Paul..... 20.00

Class 7—Imported and American Pure Bred Percheron and French Draft.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, three years old and over—					
H. G. McMillan, Rock Rapids, Iowa.....	\$25.00				
McLaughlin Bros., St. Paul.....		20.00			
H. A. Briggs, Elkhorn, Wis.....			15.00		
McLaughlin Bros., St. Paul.....				10.00	
T. L. & J. L. DeLancey, Northfield.....					5.00
Stallion, three years old and under four—					
McLaughlin Bros., St. Paul.....	20.00				
McLaughlin Bros., St. Paul.....		15.00			
H. A. Briggs, Elkhorn, Wis.....				5.00	
Stallion, two years old and under three—					
Burgess & Lukyn, Mankato.....	15.00				
McLaughlin Bros., St. Paul.....		10.00			
H. A. Briggs, Elkhorn, Wis.....				5.00	
Stallion, one year old, and under two—					
Lew W. Cochran, Crawfordville, Ind.....	15.00				
H. C. McMillan, Rock Rapids, Iowa.....		10.00			
McLaughlin Bros., St. Paul.....				5.00	
Stallion, foal of 1906—					
Crandall & Danforth, Randolph.....	15.00				
Mare, four years old or over—					
Crandall & Danforth, Randolph.....	20.00				
Crandall & Danforth, Randolph.....			15.00		
Mare, three years old, and under four—					
H. G. McMillan, Rock Rapids, Iowa....	15.00				
Crandall & Danforth, Randolph.....		10.00			
H. A. Briggs, Elkhorn, Wis.....				5.00	
Mare, two years old, and under three—					
H. G. McMillan, Rock Rapids, Iowa....	15.00				
H. G. McMillan, Rock Rapids, Iowa....		10.00			
Crandall & Danforth, Randolph.....				5.00	
Mare, one year old, and under two—					
Lew W. Cochran, Crawfordville, Ind....	15.00				
Lew W. Cochran, Crawfordville, Ind....		10.00			
H. G. McMillan, Rock Rapids, Iowa....				5.00	
Mare, foal of 1906—					
Lew W. Cochran, Crawfordville, Ind....	15.00				

SWEEPSTAKES.

Stallion, any age—

H. G. McMillan, Rock Rapids, Iowa..... 30.00

Mare, any age—

H. G. McMillan, Rock Rapids, Iowa..... 20.00

Class 8—Imported and American Pure Bred Clydesdale.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, four years old or over—					
C. E. Clarke, St. Cloud.....	25.00				
C. E. Clarke, St. Cloud.....		20.00			
C. E. Clarke, St. Cloud.....			15.00		
Stallion, three years old, and under four—					
C. E. Clarke, St. Cloud.....	20.00				
Stallion, foal of 1906—					
C. E. Clarke, St. Cloud.....	15.00				
Mare, four years old, or over—					
C. E. Clarke, St. Cloud.....	20.00				
Mare, three years old and under four—					
C. E. Clarke, St. Cloud.....	15.00				
Mare, two years old and under three—					
C. E. Clarke, St. Cloud.....	15.00				
Mare, one year old and under two—					
C. E. Clarke, St. Cloud.....	15.00				

SWEEPSTAKES.

Stallion, any age—	
C. E. Clarke, St. Cloud.....	30.00
Mare, any age—	
C. E. Clarke, St. Cloud.....	20.00

Class 9—Imported and American Pure Bred English Shire.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, four years old or over—					
Burgess & Lukyn, Mankato.....	\$25.00				
Burgess & Lukyn, Mankato.....		20.00			
Burgess & Lukyn, Mankato.....			15.00		
Finch Bros., Joliet, Ill.....				10.00	
Stallion, three years old, and under four—					
Finch Bros., Joliet, Ill.....	20.00				
Burgess & Lukyn, Mankato.....		15.00			
Stallion, two years old and under three—					
Lew W. Cochran, Crawfordsville, Ind....	15.00				
Finch Bros., Joliet, Ill.....		10.00			
Burgess & Lukyn, Mankato.....			5.00		
Stallion, one year old, and under two—					
Finch Bros., Joliet, Ill.....	15.00				
Finch Bros., Joliet, Ill.....		10.00			
Finch Bros., Joliet, Ill.....			5.00		
Stallion, foal of 1906—					
Lew W. Cochran, Crawfordsville, Ind...	15.00				
Finch Bros., Joliet, Ill.....		10.00			
Mare, three years old and under four—					
Finch Bros., Joliet, Ill.....	15.00				
Mare, two years old and under three—					
Lew W. Cochran, Crawfordsville, Ind...	15.00				
Mare, one year old, and under two—					
Lew W. Cochran, Crawfordsville, Ind..	15.00				
Finch Bros., Joliet, Ind.....		10.00			

SWEEPSTAKES.

Stallion, any age—	
Finch Bros., Joliet, Ill.....	30.00
Mare or filly, any age—	
Finch Bros., Joliet, Ill.....	20.00

Class 10—Belgian Horses.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, four years old, or over—					
H. A. Briggs, Elkham, Wis.....	\$25.00				
McLaughlin Bros., St. Paul.....		20.00			
Finch Bros., Joliet, Ill.....			15.00		
McLaughlin Bros., St. Paul.....				10.00	
H. A. Briggs, Elkham, Wis.....					5.00
Stallion, three years old, and under four—					
H. A. Briggs, Elkham, Wis.....	20.00				
H. A. Briggs, Elkham, Wis.....		15.00			
Finch Bros., Joliet, Ill.....				5.00	
Stallion, two years old and under three—					
Burgess & Lukyn, Mankato.....	15.00				
W. L. Declow, Cedar Rapids, Iowa.....		10.00			
H. A. Briggs, Elkham, Wis.....				5.00	
Mare, two years old and under three—					
Finch Bros., Joliet, Ill.....	15.00				

SWEEPSTAKES.

Stallion, any age—	
H. A. Briggs, Elkham, Wis.....	30.00
Mare, or filly, any age—	
Finch Bros., Joliet, Ill.....	20.00

Class 11—Grand Sweepstakes.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Four or more of the get of a registered trotting stallion—					
J. R. Peak & Son, Winchester, Ill.....	\$35.00				
Thos. Irvine & Son, St. Paul.....		25.00			

Class 12—Grand Sweepstakes.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Four or more of the get of a registered American, English, French or German Coach Stallion—					
McLaughlin Bros., St. Paul.....	\$35.00				
J. R. Peak & Son, Winchester, Ill.....		25.00			

Class 13—Grand Sweepstakes.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Four or more of the get of a registered draft stallion, any breed—					
H. G. McMillan, Rock Rapids, Iowa...	\$35.00				
McLaughlin Bros., St. Paul.....		25.00			
Finch Bros., Joliet, Ill.....				15.00	

Class 14—Grand Sweepstakes.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Registered trotting mare, showing two or more of her produce, any age—					
J. R. Peak & Son, Winchester, Ill.....	\$25.00				
J. R. Peak & Son, Winchester, Ill.....		15.00			
Wm. F. Guertin, Minneapolis.....				10.00	

Class 15—Grand Sweepstakes.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Registered American, English, German or French Coach mare, showing two or more of her produce, any age—					
J. R. Peak & Son, Winchester, Ill.....	\$25.00				

Class 16—Grand Sweepstakes.

Registered draft mare, showing two or more of her produce, any age—					
H. G. McMillan, Rock Rapids, Iowa.....	\$25.00				
C. E. Clarke, St. Cloud.....		15.00			
Finch Bros., Joliet, Ill.....			10.00		

Class 17—Ponies.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Stallion, three years old or over—					
Wilcox & Co., White Bear.....	\$15.00				
Mare, three years old—					
Wilcox & Co., White Bear.....	10.00				
Wilcox & Co., White Bear.....		6.00			
Wilcox & Co., White Bear.....			.3.00		
Mare and foal—Both to be considered—					
Wilcox & Co., White Bear.....	10.00				
Wilcox & Co., White Bear.....		6.00			
Herd of ponies, not less than 6 head, 1 stallion and five mares—					
Wilcox & Co., White Bear.....	20.00				
Matched driving team—					
H. C. McNair, St. Paul.....	10.00				
Wilcox & Co., White Bear.....		8.00			
Tandems—					
Wilcox & Co., White Bear.....	10.00				
Four in hand—					
Wilcox & Co., White Bear.....	10.00				
Single driver in harness—					
Wilcox & Co., White Bear.....	10.00				
Wilcox & Co., White Bear.....		8.00			
Best under saddle—					
Wilcox & Co., White Bear.....	10.00				
Wilcox & Co., White Bear.....		8.00			
H. C. McNair, St. Paul.....			5.00		

AGRICULTURAL CLASSES—GRADES.

Class 19—Trotting Strains.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Brood mare, with suckling foal at side, both to be considered—					
Roy C. Douglas, Stillwater.....	\$20.00				
James N. Nary, St. Paul.....		15.00			
Mare, three years old and under four—					
F. W. Prouse, Minneapolis.....	15.00				
Mare, one year old and under two—					
Roy C. Douglas, Stillwater.....	15.00				

Class 20—Percheron, French Draft, Belgian, Clydesdale and English Shire.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Brood mare, with suckling foal at side—both to be considered—					
Geo. Day, Northfield	\$20.00				
Fred Luchsinger, Jr., Newport.....		15.00			
Mare, three years old and under four—					
Geo. Day, Northfield	15.00				
Mare, one year old and under two—					
Geo. Day, Northfield	15.00				

ST. ANTHONY PARK, MINN., Sept. 20, 1906.

Board of Managers, State Agricultural Society, St. Paul, Minn.

Gentlemen: I herewith submit a report of Division B, Cattle Department for 1906.

The number of cattle shown at the 1906 fair exceeded the exhibits of last year in each division of the cattle department. A strong exhibit was made in Shorthorns, and Aberdeen-Angus classes. The Dairy Division presented a better show than the exhibit of last year, the classes being larger, competition keener, and the stock of superior quality, excepting the Jerseys and Brown Swiss. There were only two herds of Jerseys exhibited.

The public auction sales of the Shorthorns, Hereford, and Aberdeen-Angus, were held in the show ring on Tuesday, Wednesday, and Thursday afternoons. The success of the Shorthorn sale both as regards quality of stock and selling prices was fully up to the standard of former sales. They were conducted by the National Shorthorn Association. The Aberdeen Angus sale was not conducted by their association, and was the first public sale of Aberdeen-Angus ever held at Hamline and the results were somewhat disappointing as they were sold at unsatisfactory prices. This was also true of the Herefords, although they sold at better prices than the Aberdeen-Angus.

Many congratulations and much hearty commendation were received on account of the splendid facilities provided by the new stock amphitheater. Breeders and cattlemen generally were generous in their outspoken praise of the building and the impetus it would give to the stock exhibitors of the Minnesota Fair. Despite the diligent efforts of the transportation agent placed at the fair grounds, to secure prompt delivery of live stock, much complaint and protest was heard from exhibitors regarding the tedious delays live stock of all kinds were subject to, at switching points between the Twin Cities and the Fair Grounds. The railway agents at the grounds labored unceasingly to avoid delays of the stock deliveries in transit but seemed unable to prevent congestion and tedious hold-overs.

I would recommend that the board take this matter up before the fair begins next year with a view of adopting some measure that may obviate what may prove a serious menace to the securing of the best show herds at the Minnesota State Fair.

Respectfully submitted,
WM. M. LIGGETT,
Supt. Cattle Department.

DIVISION B—CATTLE.

Premiums awarded \$5,479.00

Superintendent—Wm. M. Liggett, St. Anthony Park.
Asst. Superintendents—Geo. A. Cobb and Robert B. Liggett.

CLASS 3—MINNESOTA SHORT-HORNS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bulls three years old or over—					
L. J. Norris, Maple Lake.....	\$20.00				
L. U. Todd, Altura.....		15.00			
Arthur Cooper, St. Cloud.....				15.00	
Bull, two years old and under three—					
D. J. McLean, Cokato.....	20.00				
L. U. Todd, Altura.....		15.00			
C. E. Clarke, St. Cloud.....				15.00	
Bull, one year old and under two—					
D. B. Searle, St. Cloud.....	20.00				
J. B. Gilfillan, Wayzata.....		15.00			
D. J. McLean, Cokato.....				15.00	
J. B. Gilfillan, Wayzata.....					10.00
Bull calf under one year—					
D. B. Searle, St. Cloud.....	20.00				
Thos. Harborn, St. Cloud.....		15.00			
D. J. McLean, Cokato.....				15.00	
O. F. Henkel, Kenyon.....					10.00
Arthur Cooper, St. Cloud.....					5.00
Cow, three years or over—					
Arthur Cooper, St. Cloud.....	20.00				
J. B. Gilfillan, Wayzata.....		15.00			
Arthur Cooper, St. Cloud.....				15.00	
Thos. Graham & Son, Howard Lake.....					10.00
L. J. Norris, Maple Lake.....					5.00
Cow or heifer, two years old and under three—					
Arthur Cooper, St. Cloud.....	20.00				
Heifer, one year old and under two—					
D. B. Searle, St. Cloud.....	20.00				
D. B. Searle, St. Cloud.....		15.00			
Arthur Cooper, St. Cloud.....				15.00	
Heifer calf, under one year—					
D. B. Searle, St. Cloud.....	20.00				
D. B. Searle, St. Cloud.....		15.00			
D. B. Searle, St. Cloud.....				15.00	
D. B. Searle, St. Cloud.....					10.00
O. F. Henkel, Kenyon.....					5.00
Groups—Four animals of either sex, get of one sire—					
D. B. Searle, St. Cloud.....	40.00				
Arthur Cooper, St. Cloud.....		30.00			
Arthur Cooper, St. Cloud.....			20.00		
O. F. Henkel, Kenyon.....					10.00
Two animals of either sex, the produce of one cow—					
D. B. Searle, St. Cloud.....	30.00				
Arthur Cooper, St. Cloud.....		25.00			
Herd, old—					
Arthur Cooper, St. Cloud.....	50.00				
Herd, young—					
D. B. Searle, St. Cloud.....	50.00				
O. F. Henkel, Kenyon.....		40.00			
Arthur Cooper, St. Cloud.....				30.00	

CLASS 22—HEREFORD.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years old or over—					
Cargill & McMillan, La Crosse, Wis....	\$20.00				
Edmonds, Shade & Co., Kingsley, Iowa.	15.00				
Bull, two years old and under three—					
Cargill & McMillan, La Crosse, Wis....	20.00				
Edmonds, Shade & Co., Kingsley, Iowa.	15.00				
J. C. Andreas, Jr., Manchester, Ill.....		15.00			
J. C. Andreas, Jr., Manchester, Ill.....			10.00		
Bull, one year old and under two—					
Cargill & McMillan, La Crosse, Wis....	20.00				
J. C. Andreas, Jr., Manchester, Ill.....		15.00			
Edmonds, Shade & Co., Kingsley, Iowa.			10.00		
A. R. Haven, Greenfield, Ill.....				5.00	
Bull calf, under one year—					
Cargill & McMillan, La Crosse, Wis....	20.00				
G. H. Hoxie, Thornton, Ill.....	15.00				
Cargill & McMillan, La Crosse, Wis....		15.00			
Edmonds, Shade & Co., Kingsley, Iowa.			10.00		
Tom Smith, Crete, Ill.....				5.00	
Cow, three years or over—					
Cargill & McMillan, La Crosse, Wis....	20.00				
Cargill & McMillan, La Crosse, Wis....	15.00				
Edmonds, Shade & Co., Kingsley, Iowa.		15.00			
A. R. Haven, Greenfield, Ill.....			10.00		
J. C. Andreas, Jr., Manchester, Ill.....				5.00	
Cow or heifer, two years old, and under three—					
Cargill & McMillan, La Crosse, Wis....	20.00				
Cargill & McMillan, La Crosse, Wis....	15.00				
Edmonds, Shade & Co., Kingsley, Iowa.		15.00			
Edmonds, Shade & Co., Kingsley, Iowa.			10.00		
J. C. Andreas, Jr., Manchester, Ill.....				5.00	
Heifer, one year old and under two—					
Cargill & McMillan, La Crosse, Wis....	20.00				
Cargill & McMillan, La Crosse, Wis....	15.00				
Edmonds, Shade & Co., Kingsley, Iowa.		15.00			
Cargill & McMillan, La Crosse, Wis....			10.00		
J. C. Andreas, Jr., Manchester, Ill.....				5.00	
Heifer calf, under one year—					
Cargill & McMillan, La Crosse, Wis....	20.00				
G. H. Hoxie, Thornton, Ill.....	15.00				
Cargill & McMillan, La Crosse, Wis....		15.00			
Cargill & McMillan, La Crosse, Wis....			10.00		
Groups—Four animals of either sex, get of one sire—					
G. H. Hoxie, Thornton, Ill.....	40.00				
Cargill & McMillan, La Crosse, Wis....	30.00				
Cargill & McMillan, La Crosse, Wis....		20.00			
Edmonds, Shade & Co., Kingsley, Iowa.			10.00		
Two animals of either sex the produce of one cow—					
Cargill & McMillan, La Crosse, Wis....	30.00				
Cargill & McMillan, La Crosse, Wis....	25.00				
Cargill & McMillan, La Crosse, Wis....		15.00			
J. C. Andreas, Jr., Manchester, Ill.....			10.00		
Herd, old—					
Cargill & McMillan, La Crosse, Wis....	50.00				
Cargill & McMillan, La Crosse, Wis....	40.00				
Edmonds, Shade & Co., Kingsley, Iowa.		30.00			
J. C. Andreas, Jr., Manchester, Ill.....			20.00		

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Herd, young—					
Cargill & McMillan, La Crosse, Wis.....	50.00				
G. H. Hoxie, Thornton, Ill.....		40.00			
J. C. Andreas, Jr., Manchester, Ill.....			30.00		
Edmonds, Shade & Co., Kingsley, Iowa.				20.00	

CLASS 23—ABERDEEN ANGUS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years old or over—					
A. C. Binnie, Alta, Iowa.....	\$15.00				
W. A. McHenry, Denison, Iowa.....		10.00			
Bull, two years old and under three—					
P. J. Donohue, Holbrook, Iowa.....	15.00				
W. J. Miller, Newton, Iowa.....		10.00			
Bull, one year old and under two—					
W. A. McHenry, Denison, Iowa.....	15.00				
P. J. Donohue, Holbrook, Iowa.....		10.00			
A. C. Binnie, Alta, Iowa.....			5.00		
Senior bull calf—					
W. A. McHenry, Denison, Iowa.....	15.00				
W. L. Gelbach, Lancaster, Wis.....		10.00			
Junior bull calf—					
A. C. Binnie, Alta, Iowa.....	15.00				
W. J. Miller, Newton, Iowa.....		10.00			
Cow, three years old or over—					
W. J. Miller, Newton, Iowa.....	15.00				
W. A. McHenry, Denison, Iowa.....		10.00			
P. J. Donohue, Holbrook, Iowa.....			5.00		
Heifer, two years old and under three—					
W. A. McHenry, Denison, Iowa.....	15.00				
P. J. Donohue, Holbrook, Iowa.....		10.00			
P. J. Donohue, Holbrook, Iowa.....			5.00		
Heifer, one year old and under two—					
A. C. Binnie, Alta, Iowa.....	15.00				
W. A. McHenry, Denison, Iowa.....		10.00			
W. A. McHenry, Denison, Iowa.....			5.00		
Senior, heifer calf—					
P. J. Donohue, Holbrook, Iowa.....	15.00				
P. J. Donohue, Holbrook, Iowa.....		10.00			
A. C. Binnie, Alta, Iowa.....			5.00		
Junior, heifer calf—					
A. C. Binnie, Alta, Iowa.....	15.00				
W. A. McHenry, Denison, Iowa.....		10.00			
W. J. Miller, Newton, Iowa.....			5.00		
Herd, young cattle—					
W. A. McHenry, Denison, Iowa.....	75.00				
A. C. Binnie, Alta, Iowa.....		50.00			
P. J. Donohue, Holbrook, Iowa.....			25.00		
Get of one sire, four animals of either sex—					
A. C. Binnie, Alta, Iowa.....	25.00				
W. J. Miller, Newton, Iowa.....		15.00			
Produce of one cow, two animals of either sex—					
W. A. McHenry, Denison, Iowa.....	25.00				
W. A. McHenry, Denison, Iowa.....		15.00			
W. J. Miller, Newton, Iowa.....			10.00		
Herd—					
A. C. Binnie, Alta, Iowa.....	100.00				
W. A. McHenry, Denison, Iowa.....		50.00			
P. J. Donohue, Holbrook, Iowa.....			25.00		

SWEEPSTAKES.

Champion male, two years old or over—

A. C. Binnie, Alta, Iowa.....Diploma

Champion female, 2 years or over—

W. J. Miller, Newton, Iowa.....Diploma

Junior champion male, under two years—

W. J. Miller, Newton, Iowa.....Diploma

Junior champion female, under two years—

A. C. Binnie, Alta, Iowa.....Diploma

CLASS 24—GALLOWAYS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years or over—					
A. F. Craymer, Morris, Ill.....	\$15.00				
Bull, two years old, and under three—					
J. E. Bales & Son, Stockport, Iowa.....	15.00				
Bull, one year old, and under two—					
C. E. Clarke, St. Cloud.....	15.00				
A. F. Craymer, Morris, Ill.....		10.00			
Senior, bull calf—					
C. E. Clarke, St. Cloud.....	15.00				
J. E. Bales & Son, Stockport, Iowa.....		10.00			
J. E. Bales & Son, Stockport, Iowa.....					
Junior, bull calf—					
C. E. Clarke, St. Cloud.....	15.00				
A. F. Craymer, Morris, Ill.....		10.00			
A. F. Craymer, Morris, Ill.....			5.00		
Cow, three years old or over—					
C. E. Clarke, St. Cloud.....	15.00				
J. E. Bales & Son, Stockport, Iowa.....		10.00			
A. F. Craymer, Morris, Ill.....			5.00		
Heifer, two years old, and under three—					
C. E. Clarke, St. Cloud.....	15.00				
A. F. Craymer, Morris, Ill.....		10.00			
J. E. Bales & Son, Stockport, Iowa.....					
Heifer, one year old, and under two—					
C. E. Clarke, St. Cloud.....	15.00				
C. E. Clarke, St. Cloud.....		10.00			
A. F. Craymer, Morris, Ill.....			5.00		
Senior, heifer calf—					
C. E. Clarke, St. Cloud.....	15.00				
J. E. Bales & Son, Stockport, Iowa.....		10.00			
A. F. Craymer, Morris, Ill.....			5.00		
Junior, heifer calf—					
C. E. Clarke, St. Cloud.....	15.00				
J. E. Bales & Son, Stockport, Iowa.....		10.00			
J. E. Bales & Son, Stockport, Iowa.....			5.00		
Herd, young cattle—					
C. E. Clarke, St. Cloud.....	25.00				
J. E. Bales & Son, Stockport, Iowa.....		15.00			
A. F. Craymer, Morris, Ill.....			10.00		
Get of one sire, four animals of either sex—					
C. E. Clarke, St. Cloud.....	25.00				
J. E. Bales & Son, Stockport, Iowa.....		15.00			
A. F. Craymer, Morris, Ill.....			10.00		
Produce of one cow, two animals of either sex—					
C. E. Clarke, St. Cloud.....	20.00				
C. E. Clarke, St. Cloud.....		15.00			
J. E. Bales & Son, Stockport, Iowa.....					
Herd—					
C. E. Clarke, St. Cloud.....	75.00				
J. E. Bales & Son, Stockport, Iowa.....		50.00			
A. F. Craymer, Morris, Ill.....			25.00		

SWEEPSTAKES.

Champion male, two years or over—

J. E. Bales & Son, Stockport, Iowa.....Diploma

Champion female, two years old or over—

J. E. Bales & Son, Stockport, Iowa.....Diploma

Junior champion male, under two years—

J. E. Bales & Son, Stockport, Iowa.....Diploma

Junior champion female, under two years—

J. E. Bales & Son, Stockport, Iowa.....Diploma

CLASS 25—HOLSTEIN-FRIESEAN.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years old and over—					
McKay Bros., Buckingham, Iowa.....	\$15.00				
W. B. Barney & Co., Hampton, Iowa....		10.00			
Geo. H. Comings, St. Anthony Park....			5.00		
Bull, one year old and under two—					
W. B. Barney & Co., Hampton, Iowa....	15.00				
John B. Irwin, Minneapolis.....		10.00			
John B. Irwin, Minneapolis.....			5.00		
Bull calf, under one year—					
John B. Irwin, Minneapolis.....	10.00				
McKay Bros., Buckingham, Iowa.....		5.00			
John B. Irwin, Minneapolis.....			3.00		
Cow, three years or over—					
McKay Bros., Buckingham, Iowa.....	15.00				
W. B. Barney & Co., Hampton, Iowa....		10.00			
John B. Irwin, Minneapolis.....			5.00		
Heifer, two years old or over—					
McKay Bros., Buckingham, Iowa.....	15.00				
John B. Irwin, Minneapolis.....		10.00			
W. B. Barney & Co., Hampton, Iowa....			5.00		
Heifer, one year old, and under two—					
W. B. Barney & Co., Hampton, Iowa....	15.00				
John B. Irwin, Minneapolis.....		10.00			
McKay Bros., Buckingham, Iowa.....			5.00		
Heifer calf, under one year—					
John B. Irwin, Minneapolis.....	10.00				
John B. Irwin, Minneapolis.....		5.00			
McKay Bros., Buckingham, Iowa.....					
Herd, young cattle—					
W. B. Barney & Co., Hampton, Iowa...	25.00				
John B. Irwin, Minneapolis.....		15.00			
McKay Bros., Buckingham, Iowa.....			10.00		
Get of one sire, four animals of either sex—					
John B. Irwin, Minneapolis.....	25.00				
W. B. Barney & Co., Hampton, Iowa...		15.00			
McKay Bros., Buckingham, Iowa.....			10.00		
Produce of one cow, two animals of either sex—					
John B. Irwin, Minneapolis.....	20.00				
Herd—					
W. B. Barney & Co., Hampton, Iowa....	75.00				
John B. Irwin, Minneapolis.....		50.00			
McKay Bros., Buckingham, Iowa.....			25.00		

SWEEPSTAKES.

Champion male, two years old or over—

McKay Bros., Buckingham, Iowa.....Diploma

Champion female, two years or over—

McKay Bros., Buckingham, Iowa.....Diploma

Junior champion male, under two years—

W. B. Barney & Co., Hampton, Iowa.....Diploma

Junior champion female, under two years—

W. B. Barney & Co., Hampton, Iowa.....Diploma

CLASS 26—JERSEYS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years old or over—					
Hunter & Smith, Beatrice, Nebraska....	\$15.00				
Dixon & Deaner, Brandon, Wis.....		10.00			
Bull, two years old, and under three—					
Hunter & Smith, Beatrice, Nebraska....	15.00				
Bull, one year old and under two—					
Hunter & Smith, Beatrice, Nebraska....	15.00				
Dixon & Deaner, Brandon, Wis.....		10.00			
Bull calf, under one year—					
Hunter & Smith, Beatrice, Nebraska....	10.00				
G. W. Peavey, Wayzata.....		5.00			
Dixon & Deaner, Brandon, Wis.....			3.00		
Cow, three years old or over—					
Hunter & Smith, Beatrice, Nebraska....	15.00				
Hunter & Smith, Beatrice, Nebraska....		10.00			
Hunter & Smith, Beatrice, Nebraska....			5.00		
Heifer, two years or over—					
Dixon & Deaner, Brandon, Wis.....	15.00				
Dixon & Deaner, Brandon, Wis.....		10.00			
Hunter & Smith, Beatrice, Nebraska....			5.00		
Heifer, one year old, and under two—					
Dixon & Deaner, Brandon, Wis.....	15.00				
Hunter & Smith, Beatrice, Nebraska....		10.00			
Hunter & Smith, Beatrice, Nebraska....					
Heifer calf, under one year, and over 4 months—					
Hunter & Smith, Beatrice, Nebraska....	10.00				
Dixon & Deaner, Brandon, Wis.....		5.00			
Hunter & Smith, Beatrice, Nebraska....			3.00		
Herd, young cattle—					
Hunter & Smith, Beatrice, Nebraska....	25.00				
Get of one sire, four animals of either sex—					
Hunter & Smith, Beatrice, Nebraska....	25.00				
Dixon & Deaner, Brandon, Wis.....		15.00			
Produce of one cow, two animals of either sex—					
Dixon & Deaner, Brandon, Wis.....	20.00				
Hunter & Smith, Beatrice, Nebraska....		15.00			
Herd—					
Hunter & Smith, Beatrice, Nebraska....	75.00				
Dixon & Deaner, Brandon, Wis.....		50.00			

SWEEPSTAKES.

Champion male, two years old or over—

 Hunter & Smith, Beatrice, Nebraska.....Diploma

Champion female, two years old or over—

 Hunter & Smith, Beatrice, Nebraska.....Diploma

Junior champion male under two years—

 Hunter & Smith, Beatrice, Nebraska.....Diploma

Junior champion female, under two years—

 Dixon & Deaner, Brandon, Wis.....Diploma

CLASS 27—GUERNSEY.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Bull, three years old or over—					
M. D. Cunningham, Burlington, Wis....	\$15.00				
M. D. Cunningham, Burlington, Wis....		10.00			
Bull, two years old, and under three—					
Gilbert J. Hickcox, Whitefish Bay, Wis.	15.00				
Bull, one year old, and under two—					
M. D. Cunningham, Burlington, Wis....	15.00				
Gilbert J. Hickcox, Whitefish Bay, Wis..		10.00			
M. D. Cunningham, Burlington, Wis....			5.00		
Bull, under two years old—					
M. D. Cunningham, Burlington, Wis....	10.00				
M. D. Cunningham, Burlington, Wis....		5.00			
Gilbert J. Hickcox, Whitefish Bay, Wis.			3.00		
Cow, three years old or over—					
M. D. Cunningham, Burlington, Wis....	15.00				
Gilbert J. Hickcox, Whitefish Bay, Wis.		10.00			
M. D. Cunningham, Burlington, Wis....			5.00		
Heifer, two years old or over—					
M. D. Cunningham, Burlington, Wis....	15.00				
M. D. Cunningham, Burlington, Wis....		10.00			
Gilbert J. Hickcox, Whitefish Bay, Wis.			5.00		
Heifer, one year old, and under two—					
M. D. Cunningham, Burlington, Wis....	15.00				
Gilbert J. Hickcox, Whitefish Bay, Wis.		10.00			
M. D. Cunningham, Burlington, Wis....			5.00		
Heifer calf, under one year, and over 4 months—					
Gilbert J. Hickcox, Whitefish Bay, Wis.	10.00				
M. D. Cunningham, Burlington, Wis....		5.00			
Gilbert J. Hickcox, Whitefish Bay, Wis.			3.00		
Herd, young cattle—					
M. D. Cunningham, Burlington, Wis....	25.00				
Get of one sire, four animals of either sex—					
M. D. Cunningham, Burlington, Wis....	25.00				
Gilbert J. Hickcox, Whitefish Bay, Wis.		15.00			
Produce of one cow, 2 animals of either sex—					
M. D. Cunningham, Burlington, Wis....	20.00				
Gilbert J. Hickcox, Whitefish Bay, Wis.		15.00			
Herd—					
M. D. Cunningham, Burlington, Wis....	75.00				
Gilbert J. Hickcox, Whitefish Bay, Wis.		50.00			

SWEEPSTAKES.

Champion male, two years old or over—		Diploma
Gilbert J. Hickcox, Whitefish Bay, Wis.....		Diploma
Champion female, two years or over—		Diploma
Gilbert J. Hickcox, Whitefish Bay, Wis.....		Diploma
Junior champion male, under two years—		Diploma
Gilbert J. Hickcox, Whitefish Bay, Wis.....		Diploma
Junior champion female under two years—		Diploma
Gilbert J. Hickcox, Whitefish Bay, Wis.....		Diploma

CLASS 28—RED POLLED.

	1st Prem.	2nd Prem.	3rd Prem.
Bull, three years old or over—			
G. W. Coleman, Webster City, Iowa.....	\$15.00		
J. H. Aultfather, Austin.....		10.00	
Geo. B. Buck & Co., Orion, Ill.....			5.00
Bull, two years old, and under three—			
W. S. Hill, Alexandria, S. D.....	15.00		
A. W. Dopke, N. Milwaukee, Wis.....		10.00	
Bull, one year old, and under two—			
G. W. Coleman, Webster City, Iowa.....	15.00		
G. W. Coleman, Webster City, Iowa.....		10.00	
Geo. B. Buck & Son, Orion, Ill.....			5.00
Bull calf, under one year—			
W. S. Hill, Alexandria, S. D.....	10.00		
G. W. Coleman, Webster City, Iowa.....		5.00	
Geo. B. Buck & Co., Orion, Ill.....			3.00
Cow, three years old or over—			
Geo. B. Buck & Co., Orion, Ill.....	15.00		
J. H. Aultfather, Austin.....		10.00	
G. W. Coleman, Webster City, Iowa.....			5.00
Heifer, two years old, and under three—			
A. W. Dopke, N. Milwaukee, Wis.....	15.00		
W. S. Hill, Alexandria, S. D.....		10.00	
J. H. Aultfather, Austin.....			5.00
Heifer, one year old and under two—			
W. S. Hill, Alexandria, S. D.....	15.00		
G. W. Coleman, Webster City, Iowa.....		10.00	
Geo. B. Buck, Orion, Ill.....			5.00
Heifer calf, under one year—			
W. S. Hill, Orion, Ill.....	10.00		
G. W. Coleman, Webster City, Iowa.....		5.00	
W. S. Hill, Alexandria, S. D.....			3.00
Herd, young cattle—			
G. W. Coleman, Webster City, Iowa.....	25.00		
W. S. Hill, Alexandria, S. D.....		15.00	
Geo. B. Buck, Orion, Ill.....			10.00
Get of one sire, four animals of either sex—			
G. W. Coleman, Webster City, Iowa.....	25.00		
Geo. B. Buck & Co., Orion, Ill.....		10.00	
Produce of one cow, two animals of either sex—			
W. S. Hill, Alexandria, S. D.....	15.00		
Geo. B. Buck & Co., Orion, Ill.....		10.00	
Herd—			
G. W. Coleman, Webster City, Iowa.....	75.00		
W. S. Hill, Alexandria, S. D.....		50.00	
Geo. B. Buck & Co., Orion, Ill.....			25.00

SWEEPSTAKES.

Champion male, two years or over—

G. W. Coleman, Webster City, Iowa.....Diploma

Champion female, two years or over—

Geo. B. Buck & Co., Orion, Ill.....Diploma

Junior champion, male, under two years—

G. W. Coleman, Webster City, Iowa.....Diploma

Junior champion female, under two years—

W. S. Hill, Alexandria, S. D.....Diploma

CLASS 29—BROWN SWISS.

	1st Prem.
Bull, three years old or over— H. W. Ayers, Honey Creek, Wis.....	\$15.00
Bull, two years old, and under three— H. W. Ayers, Honey Creek, Wis.....	15.00
Bull, one year old and under two— H. W. Ayers, Honey Creek, Wis.....	15.00
Bull calf, under one year— H. W. Ayers, Honey Creek, Wis.....	10.00
Cow, three years or over— H. W. Ayers, Honey Creek, Wis.....	15.00
Helper, two years old and under three— H. W. Ayers, Honey Creek, Wis.....	15.00
Helper, one year old, and under two— H. W. Ayers, Honey Creek, Wis.....	15.00
Helper calf, under one year, and over four months— H. W. Ayers, Honey Creek, Wis.....	10.00
Herd young cattle— H. W. Ayers, Honey Creek, Wis.....	25.00
Get of one sire, four animals of either sex— H. W. Ayers, Honey Creek, Wis.....	25.00
Produce of one cow, two animals of either sex— H. W. Ayers, Honey Creek, Wis.....	15.00
Herd— H. W. Ayers, Honey Creek, Wis.....	75.00

SWEEPSTAKES.

Champion male, two years old, or over— H. W. Ayers, Honey Creek, Wis.....	Diploma
Champion femalé, two years old, or over— H. W. Ayers, Honey Creek, Wis.....	Diploma
Junior champion male, under two years— H. W. Ayers, Honey Creek, Wis.....	Diploma
Junior champion female, under two years— H. W. Ayers, Honey Creek, Wis.....	Diploma

CLASS 30—FAT CATTLE.

	1st Prem.	2nd Prem.	3rd Prem.
Lot 116—			
Steers, carload two years old, and under three— F. E. Woodward & Sons, Langdon.....	100.00		
L. Lamberson, Warren.....		50.00	
Lot 117—			
Cattle, carload, one year old, and under two— L. Lamberson, Warren.....	100.00		
L. Lamberson, Warren.....		50.00	

MERCHANTS' HOTEL SWEEPSTAKES.

For the best carload of cattle entered in Lots 116 and 117 a Silver Loving Cup—
F. E. Woodward & Sons, Langdon.....Silver Loving Cup

SOUTH ST. PAUL SPECIAL.

	1st Prem.	2nd Prem.	3rd Prem.
Carload steers—			
F. E. Woodward & Sons, Langdon.....	\$175.00		
L. Lamberson, Warren.....		\$75.00	
Carload lot cattle, one year, and under two— F. E. Woodward & Sons, Langdon.....	175.00		
L. Lamberson, Warren.....		75.00	

CLASS 30½—FAT GRADE CATTLE.

	1st Prem.	2nd Prem.	3rd Prem.
Steer, spayed, or martin heifer, two years—			
W. J. Miller, Newton, Iowa.....	\$25.00		
G. H. Hoxie, Thornton, Ill.....		20.00	
J. R. Peak & Son, Winchester, Ill.....			15.00
Steer, spayed, or martin heifer, one year—			
W. J. Miller, Newton, Iowa.....	25.00		
G. H. Hoxie, Thornton, Ill.....		20.00	
W. J. Miller, Newton, Iowa.....			15.00
Steer, spayed, or martin heifer, under one year—			
W. J. Miller, Newton, Iowa.....	20.00		
W. J. Miller, Newton, Iowa.....		15.00	
J. R. Peak & Son, Winchester, Ill.....			10.00
Best steer, spayed, or martin heifer, any age—			
W. J. Miller, Newton, Iowa.....	25.00		
Spayed, or martin heifer, one 2 years old, one 1 year old, one under 1 year—			
W. J. Miller, Newton, Iowa.....	25.00		

HEREFORD SPECIALS.

1st Premium.

Steer, two, and under three years—	
Cargill & McMillan, La Crosse, Wis.....	Edmonds, Shade & Co., Kingsley, Ia.
Steer, one, and under two years—	
Cargill & McMillan, La Crosse, Wis.....	Edmonds, Shade & Co., Kingsley, Ia.
Steer, under one year—	
Cargill & McMillan, La Crosse, Wis.....	Edmonds, Shade & Co., Kingsley, Ia.

Sweepstakes.—Hereford.

Cargill & McMillan, La Crosse, Wis.

LIVE STOCK.

National Short-Horn Show.

Judges: E. K. Thomas, North Middleton, Ky.; Frank Van Natta, Fowler, Ind.; Rankin Forbes, Henry, Ill.

BULL, THREE YEARS OLD OR OVER.

1st—White Hall Marshal, 209776; owned by F. W. Harding, Waukesha, Wis.
 2nd—Baption Favorite, 231780; owned by C. E. Clarke, St. Cloud, Minn.
 3rd—Archer Halstead, 216384; owned by W. J. Bernd, New Richmond, Wis.
 4th—Ajax of Elba, 219483; owned by Todd Bros., Altura, Minn.
 5th—(120)—Lord Butterfly, 206975; owned by L. J. Norris, Maple Lake, Minn.

BULL, TWO YEARS OLD AND UNDER THREE.

1st—Baption Chief, 227581; owned by W. W. Brown, Amenia, N. D.
 2nd—Golden Archer, 242508; owned by D. J. McLean, Cokato, Minn.
 3rd—Queen's Pride, 240129; owned by Todd Bros.

SENIOR YEARLING BULL.

1st—Nonpareil Star, 238402; owned by Samuel Fletcher, Matteson, N. D.
 2nd—Gallant Knight, 242912; owned by D. B. Searle, St. Cloud, Minn.
 3rd—Columbia Chief 2nd, 241254; owned by J. P. Gilfillan, Wayzata, Minn.
 4th—Goldendrop Boy, 263902; owned by D. J. McLean.

JUNIOR YEARLING BULL.

- 1st—Pride of Fashion, 264007; owned by N. A. Lind, Rolfe, Iowa.
- 2nd—Bloom's Best, 263189; owned by Aarbeck Bros., Kensett, Iowa.
- 3rd—Crimson Knight, 242725; owned by C. E. Clarke.
- 4th—Royal Knight, 263190; owned by O. F. Henkel, Kenyon, Minn.
- 5th—Ben Avon Archer, 264099; owned by J. B. Gilfillan.
- 6th—Choice Archer, 242898; owned by W. J. Bernd.

SENIOR BULL CALF.

- 1st—Anoka Sultan, 264212; owned by F. W. Harding.
- 2nd—Choice Knight, 253397; owned by C. E. Clarke.
- 3rd—Gloster Marshal, 263130; owned by F. W. Harding.
- 4th—(119) Suitor, 263191; owned by F. W. Harding.
- 5th—Flower Knight, 264126; owned by Thos. Harborn, St. Cloud, Minn.
- 6th—Mina's Ensign, 263795; owned by S. Fletcher, Matteson, N. Dak.
- 7th—Winnie's Archer, 262437; owned by W. J. Bernd.
- 8th—Mikado, 263752; owned by O. F. Henkel, Kenyon, Minn.

JUNIOR BULL CALF.

- 1st—Knight Commander, 263720; owned by C. E. Clarke.
- 2nd—Sultan Commander, 263132; owned by F. W. Harding.
- 3rd—Victorious Archer, 264397; owned by D. B. Searle.
- 4th—Roan Archer, 262944; owned by W. J. Bernd.
- 5th—Lavender Duke, 263903; owned by D. J. McLean.

CATTLE.

National Short-Horn Show.

Judges: E. K. Thomas, Frank Van Natta, Rankin Forbes.

COW, THREE YEARS OLD OR OVER.

- 1st—Welcome of Meadow Lawn 9th; owned by C. E. Clarke.
- 2nd—Princess Flora 2nd; owned by F. W. Harding.
- 3rd—Lady Lovell 4th; owned by W. J. Bernd.
- 4th—Moneyfussell Maid; owned by F. W. Harding.
- 5th—Mamie; owned by W. W. Brown.
- 6th—Ruth Barrington 26th; owned by Arthur Cooper.

COW OR HEIFER, TWO YEARS OLD AND UNDER THREE.

- 1st—Duchess of Lancaster 13th; owned by C. E. Clarke.
- 2nd—Anoka Broadhocks; owned by F. W. Harding.
- 3rd—Spring Grove Kirklevington 4th; owned by W. W. Brown.
- 4th—Dorothea 2nd; owned by C. E. Clarke.
- 5th—Rose Jane; owned by W. J. Bernd.

SENIOR YEARLING HEIFER.

- 1st—Clara Belle; owned by F. W. Harding.
- 2nd—Lady Mystic 2nd; owned by C. E. Clarke.
- 3rd—Lovely Belle; owned by N. A. Lind.
- 4th—Rose of Autumn; owned by N. A. Lind.
- 5th—Phyletta; owned by W. W. Brown.
- 6th—Ollie Bly 38th; owned by Arthur Cooper.

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JUNIOR YEARLING HEIFER.

- 1st—Missie of Browndale 12th; owned by F. W. Harding.
- 2nd—Alice of Meadow Lawn; owned by C. E. Clarke.
- 3rd—Fancy Lovell; owned by F. W. Harding.
- 4th—Winsome Lassie; owned by D. B. Searle, St. Cloud.
- 5th—Beaver Creek Arabella; owned by N. A. Lind.
- 6th—Mina's Lilly; owned by D. B. Searle.
- 7th—Miss Birdella; owned by S. Fletcher.
- 8th—Golden Moss Rose; owned by S. Fletcher.

SENIOR HEIFER CALF.

- 1st—Lady Dorothea 3rd (Vol. 68); owned by C. E. Clarke, St. Cloud.
- 2nd—Anoka Gloster 2nd (Vol. 68); owned by F. W. Harding, Waukesha, Wis.
- 3rd—Violet Pearl (Vol. 68); owned by D. B. Searle, St. Cloud.
- 4th—Merry Maid (Vol. 68); owned by D. B. Searle.
- 5th—Lustrous Lady (Vol. 68); owned by D. B. Searle.
- 6th—Victoria Countess (Vol. 68); owned by N. A. Lind, Rolfe, Iowa.
- 7th—Broadhocks Sultana (Vol. 68); owned by F. W. Harding.
- 8th—Dorothea 3rd (Vol. 67); owned by C. E. Clarke.

JUNIOR HEIFER CALF.

- 1st—Molly 3rd (Vol. 68); owned by C. E. Clarke.
- 2nd—Scottish Belle (Vol. 68); owned by D. B. Searle.
- 3rd—Lady Dorothea 4th (Vol. 67); owned by C. E. Clarke.
- 4th—Blue Bird 4th (Vol. 68); owned by O. F. Henkel, Kenyon.
- 5th—Ramsden Flower (Vol. 68); owned by F. W. Harding.
- 6th—Sunset (Vol. 68); owned by N. A. Lind.
- 7th—Happy New Year (Vol. 67); owned by W. J. Bernd.
- 8th—Mina Irene 3rd (Vol. 68); owned by S. Fletcher, Matteson, N. D.

Judges: E. K. Thomas, Frank Van Natta, Rankin Forbes.

SENIOR SWEEPSTAKES.—BULL TWO YEARS OLD OR OVER.

White Hall Marshal, 209776; owned by F. W. Harding.

JUNIOR SWEEPSTAKES.—BULL UNDER TWO YEARS OLD.

Nonpareil Star, 238402; owned by Samuel Fletcher.

GRAND SWEEPSTAKES.—BEST BULL ANY AGE.

White Hall Marshal, 209776; owned by F. W. Harding.

SENIOR SWEEPSTAKES.—COW TWO YEARS OLD OR OVER.

Welcome of Meadow Lawn; owned by C. E. Clarke.

JUNIOR SWEEPSTAKES.—HEIFER UNDER TWO YEARS OLD.

Clara Belle; owned by F. W. Harding.

GRAND SWEEPSTAKES.—BEST COW OR HEIFER, ANY AGE.

Welcome of Meadow Lawn 9th; owned by C. E. Clarke.

AGED HERD.

1st—C. E. Clarke.	3rd—W. W. Brown.
2nd—F. W. Harding.	4th—W. J. Bernd.

YOUNG HERD.

1st—C. E. Clarke.	4th—N. A. Lind.
2nd—F. W. Harding.	5th—Samuel Fletcher.
3rd—D. B. Searle.	

CALF HERD.

1st—C. E. Clarke.	4th—S. Fletcher.
2nd—D. B. Searle.	5th—O. F. Henkel.
3rd—F. W. Harding.	

Sweepstakes.—The Merchants Hotel Special.**BEST YOUNG HERD IN THE SHOW.**

Silver service, won by C. E. Clarke.

Judges: E. K. Thomas, Frank Van Natta, Rankin Forbes.

GROUP.—TWO ANIMALS OF EITHER SEX, THE PRODUCE OF ONE COW.

1st—Bapton Favorite, 231780, and Dorothea 2nd, produce of Dorothea; owned by C. E. Clarke.	
2nd—Anoka Broadhocks, and Broadhocks Sultana; produce of Shenstone Princess; owned by F. W. Harding.	
3rd—Clara Belle and Claret; produce of Clara 58th.	
4th—Gallant Knight, 242912; produce of Mary Ramsden; and Merry Maid; owned by D. B. Searle.	
5th—Phyleta and Phylene; produce of 3rd Young Phyllis of Helendale; owned by W. W. Brown.	

FOUR ANIMALS OF EITHER SEX, THE GET OF ONE SIRE.

1st—The get of White Hall Sultan, 163573; owned by F. W. Harding.	
2nd—The get of March Knight, 188106; owned by C. E. Clarke.	
3rd—The get of Pitlilie Merry Lad, 191507; owned by D. B. Searle.	
4th—The get of Fancy's Pride, 182014; owned by N. A. Lind.	
5th—The get of White Hall Marshal, 209776; owned by F. W. Harding.	

Fat Stock.**STEER, TWO YEARS OLD AND UNDER THREE.**

1st—Sunray; owned by J. R. Peak & Son, Winchester, Ill.

STEER, SPAYED, OR MARTIN HEIFER, ONE YEAR OLD AND UNDER TWO.

1st—Barmpton Choice; owned by N. A. Lind.

2nd—White Star; owned by N. A. Lind.

3rd—Charley Gray; owned by J. R. Peak & Son.

STEER UNDER ONE YEAR OLD.

1st—Tom; owned by N. A. Lind.

2nd—Johnny Quinn; owned by J. R. Peak & Son.

SWEEPSTAKES.**BEST STEER, SPAYED OR MARTIN HEIFER, ANY AGE.**

Barmpton Choice; owned by N. A. Lind.

HERD, CONSISTING OF ONE STEER SPAYED OR MARTIN HEIFER, TWO YEARS OLD AND UNDER THREE, ONE ONE YEAR OLD AND UNDER TWO, AND ONE UNDER ONE YEAR OLD.

1st—J. R. Peak & Son.

STEER, SPAYED OR MARTIN HEIFER, ONE YEAR OLD AND UNDER TWO.

1st—High Roller; owned by J. R. Peak & Son.

2nd—Jimmie; owned by N. A. Lind.

3rd—Red Prince; owned by N. A. Lind.

STEER, TWO YEARS OLD AND UNDER THREE.

1st—Buster Brown; owned by J. R. Peak & Son.

STEER, UNDER ONE YEAR OLD.

1st—Tommy the Lad; owned by J. R. Peak & Son.

SWEEPSTAKES.**BEST STEER, SPAYED OR MARTIN HEIFER, ANY AGE.**

1st—Buster Brown; owned by J. R. Peak & Son.

HERD, CONSISTING OF ONE STEER, SPAYED OR MARTIN HEIFER, TWO YEARS OLD AND UNDER THREE, ONE ONE YEAR OLD AND UNDER TWO, AND ONE UNDER ONE YEAR OLD.

1st—J. R. Peak & Son.

Minnesota Shorthorns.

Judge: David Clark, Bottineau, N. D.

BULL, THREE YEARS OLD OR OVER.

1st—Lord Butterfly, 206975; owned by L. J. Horris, Maple Lake.

2nd—Ajax of Elba, 219483; owned by L. U. Todd, Altura.

3rd—Beauty's Victor 7th; owned by Arthur Cooper, St. Cloud.

BULL, TWO YEARS OLD AND UNDER THREE.

- 1st—Golden Archer, 242508; owned by D. J. McLean, Cokato.
- 2nd—Queen's Pride, 240129; owned by L. U. Todd.
- 3rd—Meadow King, 228655; owned by Thos. R. Hudgin, Renville.

BULL, ONE YEAR OLD AND UNDER TWO.

- 1st—Gallant Knight; owned by D. B. Searle, St. Cloud.
- 2nd—Columbia Chief 2nd; owned by J. B. Gilfillan, Wayzata.
- 3rd—Golden Drop's Boy; owned by D. J. McLean.
- 4th—Ben Avon Archer, 264099; owned by J. B. Gilfillan.

BULL CALF, UNDER ONE YEAR.

- 1st—Victorious Archer; owned by D. B. Searle.
- 2nd—Flower Knight, 264126; owned by Thomas Harborn, St. Cloud.
- 3rd—Lavender Duke, 263903; owned by D. J. McLean.
- 4th—Mikado, 263752; owned by O. F. Henkle, Kenyon.
- 5th—Arclight 16th; owned by Arthur Cooper.

COW, THREE YEARS OLD OR OVER.

- 1st—Ruth Barrington 26th; owned by Arthur Cooper.
- 2nd—Emily's Pride; owned by J. B. Gilfillan.
- 3rd—Beauty's Pride 10th; owned by Arthur Cooper.
- 4th—Rosette (Vol. 49); owned by Thos. Graham & Son, Howard Lake.
- 5th—Cloverleaf Butterfly 2nd; owned by L. J. Morris.

COW OR HEIFER, TWO YEARS OLD AND UNDER THREE.

- 1st—Ollie Bly 36th; owned by Arthur Cooper.

HEIFER, ONE YEAR OLD AND UNDER TWO.

- 1st—Winsom Sallie; owned by D. B. Searle.
- 2nd—Mina's Lily; owned by D. B. Searle.
- 3rd—Ollie Bly 38th; owned by Arthur Cooper.

HEIFER CALF UNDER ONE YEAR.

- 1st—Violet Pearl; owned by D. B. Searle.
- 2nd—Lustrous Lady; owned by D. B. Searle.
- 3rd—Merry Maid; owned by D. B. Searle.
- 4th—Scottish Belle; owned by D. B. Searle.
- 5th—Regina; owned by O. F. Henkle.

GET OF ONE SIRE.

- 1st—.....; owned by D. B. Searle.
- 2nd—Get of Prince Victor; owned by Arthur Cooper.
- 3rd—Get of Arclight; owned by Arthur Cooper.
- 4th—.....; owned by O. F. Henkle.

PRODUCE OF ONE COW.

- 1st—Owned by D. B. Searle.
- 2nd—Owned by Arthur Cooper.

YOUNG HERD.

- 1st—Owned by D. B. Searle.
- 2nd—Owned by O. F. Henkle.
- 3rd—Owned by Arthur Cooper.

SHORTHORN SALE.

Cow, Imp. Bessie 49th; consigned by Browndale Farm, Minneapolis; sold to O. O. Smith, Des Moines, Iowa.....	\$300.00
Cow, Molly 2nd; consigned by C. E. Clarke, St. Cloud; sold to O. O. Smith, Des Moines, Iowa.....	395.00
Cow, Imp. Golden Wreath 9th; consigned by R. A. Wilkinson, Crookston; sold to F. W. Harding, Waukesha, Wis.....	225.00
Cow, Fairplay 5th; consigned by C. E. Clarke; sold to Thos. Harborn, St. Cloud	230.00
Bull, Gloster Marshal, 263130; consigned by F. W. Harding, Waukesha, Wis.; sold to O. O. Smith, Des Moines, Iowa.....	575.00
Cow, Mina's Lily; consigned by D. B. Searle; sold to Frank O. Lowden, Oregon, Ill.	180.00
Cow, Mina 3rd; consigned by Samuel Fletcher, Matteson, N. D.; sold to Davis Clarke, Bottineau, N. D.....	200.00
Cow, Diamond 31st; consigned by R. A. Wilkinson; sold to F. W. Harding..	300.00
Cow, Beauty's Pride 10th; consigned by Arthur Cooper; sold to O. O. Smith.	150.00
Cow, Beauty's Pride 24th; consigned by Arthur Cooper, St. Cloud; sold to D. N. Tallman, Willmar.....	200.00
Cow, Lady Washington; consigned by Thos. R. Hudgin, Renville; sold to Geo. Patterson, Worthington.....	60.00
Cow, Lucy Princess of Riverside 2nd; consigned by O. F. Henkle, Kenyon; sold to Samuel Fletcher.....	110.00
Calf sold immediately for \$50 to David Clarke, Pierson, Idaho.	
Cow, Maple Leaf; consigned by J. B. Gilfillan, Wayzata; sold to A. A. Leavitt, White Rock, S. D.....	100.00
Cow, Gipsy Winsome; consigned by R. A. Wilkinson; sold to G. W. Glotfelder, Waterville.....	170.00
Bull, Golden Drop Boy, 263902; consigned by D. J. McLean, Cokato; sold to J. Jorstad, Tracy, Minn.....	245.00
Cow, Cloverleaf Butterfly; consigned by L. J. Norris, Maple Lake; sold to H. F. Brown, Minneapolis.....	130.00
Cow, Monarch's Vesey; consigned by D. B. Searle; sold to Jno. Martins, Goodhue	105.00
Cow, Ruth Barrington 26th; consigned by Arthur Cooper; sold to D. N. Tallman, Willmar.....	175.00
Bull, Bloom's Best, 263189; consigned by Aarback Bros., Kensett, Ia.; sold to Jas. E. Rea, St. Paul.....	260.00
Cow, Frances; consigned by O. F. Henkel; sold to Luke Stannard, Taylor Falls	85.00
Cow, Alice K. 12th; consigned by C. E. Clarke; sold to Samuel Fletcher....	125.00
Cow, Orange Lady; consigned by R. A. Wilkinson; sold to D. N. Tallman, Willmar	200.00
Bull, Lord Butterfy, 206975; consigned by L. J. Norris, Maple Lake; sold to Jas. Stewart, Montevideo.....	180.00
Cow, Belle Nominee 3rd; consigned by Brownsdale Farm, Minneapolis; sold to Samuel Fletcher.....	130.00
Bull, Sultor, 263191; consigned by F. W. Harding; sold to North Dakota Agricultural College, Fargo, N. D.....	400.00
Bull, Ajax of Elba, 219483; consigned by Todd Bros., Elba; sold to E. J. Cowell, West Concord.....	100.00
Cow, Rose Hill 3rd; consigned by Thos. R. Hudgin, Renville; sold to H. G. Hillesheim, Sleepy Eye	70.00
Cow, Bride-Elect; consigned by Arthur Meeker, Chicago; sold to G. W. Glotfelder, Waterville	125.00
Cow, Martha Gray; consigned by D. B. Searle; sold to H. G. Hillesheim....	120.00
Cow, Maggie of Elmwood; consigned by Brownsdale Farm; sold to John Martins, Goodhue	150.00
Bull, Crimson Knight, 242725; consigned by C. E. Clarke; sold to F. Gehring, Stillwater	90.00
Cow, Zella; consigned by Arthur Meeker; sold to Edw. McCarthy, Madelia..	90.00
Cow, Ollie Bly 36th; consigned by Arthur Cooper; sold to A. W. Haggerty, Hammond, Minn.	100.00

Cow, Emily's Pride; consigned by J. B. Gilfillan; sold to W. H. Close, Hibbing	80.00
Bull, Nonpareil Knight, 263204; consigned by C. E. Clarke; sold to W. E. Canfield, Downing, Wis.....	105.00
Cow, Lake Park Lydia 69th; consigned by Brownsdale Farm; sold to D. N. Tollman	275.00
Cow, Missie of Lakeview; consigned by D. B. Searle; sold to Jas. O'Hara, Lanesboro	250.00
Cow, Minnie Leslie 15th; consigned by Arthur Cooper; sold to Ed McCarthy, Madelia.....	100.00
Cow, Rosette; consigned by Thos. Graham & Son, Howard Lake; sold to W. H. Close.....	105.00
Bull, Ben Avon Archer, 264099; consigned by J. B. Gilfillan; sold to M. B. Lang, Webster, S. D.....	100.00
Bull, Royal Knight, 263190; consigned by O. F. Henkle; sold to W. J. Kolseth, Denison, Minn.....	150.00
Cow, Flora; consigned by Thos. R. Hudgin; sold to W. F. Deters, Caledonia	

HEREFORDS.

Judge: Thomas Clark, Beecher, Ill.

BULL, THREE YEARS OLD OR OVER.

1st—Princepts 4th, 143394; owned by Cargill & McMillan, La Crosse, Wis.
 2nd—King Edward, 165604; owned by Edmond, Shade & Co., Kingsley, Ia.

BULL, TWO YEARS OLD AND UNDER THREE.

1st—Privateer 2nd, 182133; owned by Cargill & McMillan.
 2nd—Sir Albany 9th, 180123; owned by Edmond, Shade & Co., Kingsley, Ia.
 3rd—Prosper, 180483; owned by J. C. Andras, Jr., Manchester, Ill.
 4th—Haven's Protector, 180981; owned by J. C. Andras, Jr.

BULL, ONE YEAR OLD AND UNDER TWO.

1st—Bonnie Bray 3rd, 203317; owned by Cargill & McMillan.
 2nd—General Manager 2nd, 305606; owned by G. H. Hoxie, Thornton, Ill.
 3rd—Hummer 4th, 200481; owned by J. C. Andras, Manchester, Ill.
 4th—Passport Prize, 216944; owned by Edmond, Shade & Co.
 5th—Hummer 5th, 200482; owned by A. R. Haven, Greenfield, Ill.

BULL CALF, UNDER ONE YEAR OLD.

1st—Fulfiller 5th, 250510; owned by Cargill & McMillan, La Crosse, Wis.
 2nd—Peerless Perfection 10th, 235454; owned by G. H. Hoxie, Thornton, Ill.
 3rd—Fulfiller 3rd, 230508; owned by Cargill & McMillan.
 4th—Sir Edward, 232986; owned by Edmond, Shade & Co.
 5th—Proud Wilton, 237289; owned by Tom Smith, Crete, Ill.

COW, THREE YEARS OLD OR OVER.

1st—Heliotrope, 159451; owned by Cargill & McMillan.
 2nd—Twilight, 167464; owned by Cargill & McMillan.
 3rd—Francis, 165603; owned by Edmond, Shade & Co.
 4th—Ona 3rd, 91818; owned by A. R. Haven, Greenfield, Ill.
 5th—Viola, 159742; owned by J. C. Andras, Jr.

COW OR HEIFER, TWO YEARS AND UNDER THREE.

1st—Miss Donald 17th, 184573; owned by Cargill & McMillan.
 2nd—Golden Lassie, 182128.
 3rd—Delight 3rd, 183991; owned by Edmond, Shade & Co.
 4th—Columbus' Lassie 2nd, 183986; owned by Edmond, Shade & Co.
 5th—Faith, 184686; owned by J. C. Andras, Jr.

HEIFER, ONE YEAR OLD AND UNDER TWO.

- 1st—Ethel 2nd, 203170; owned by Cargill & McMillan.
- 2nd—Magnonette, 209514; owned by Cargill & McMillan.
- 3rd—Lady Albany, 207790; owned by Edmond, Shade & Co.
- 4th—Crocus 2nd, 203169; owned by Cargill & McMillan.
- 5th—Lady Improver 6th, 202903; owned by J. C. Andras.

HEIFER CALF, UNDER ONE YEAR OLD.

- 1st—Miss Fuller, 230514; owned by Cargill & McMillan.
- 2nd—Belle Perfection, 235447; owned by G. H. Hoxie.
- 3rd—Miss Filler 6th, 239656; owned by Cargill & McMillan.
- 4th—Miss Filler, 230613; owned by Cargill & McMillan.
- 5th—Miss Filler, 230517; owned by Cargill & McMillan.

GET OF ONE SIRE.

- 1st—Owned by G. H. Hoxie.
- 2nd—Owned by Cargill & McMillan.
- 3rd—Owned by Cargill & McMillan.
- 4th—Owned by Edmond, Shade & Co.

PRODUCE OF ONE COW.

- 1st—Owned by Cargill & McMillan.
- 2nd—Owned by Cargill & McMillan.
- 3rd—Owned by Cargill & McMillan.
- 4th—Produce of Doranna 4th; owned by J. C. Andras

HERD.

- 1st—Owned by Cargill & McMillan.
- 2nd—Owned by Cargill & McMillan.
- 3rd—Owned by Edmond, Shade & Co.
- 4th—Owned by J. C. Andras.

YOUNG HERD.

- 1st—Owned by Cargill & McMillan.
- 2nd—Owned by G. H. Hoxie.
- 3rd—Owned by J. C. Andras.
- 4th—Owned by Edmond, Shade & Co.

HEREFORD SALE.

No.	Name.	Consignor.	Buyer.	Address.	Price.
1	Petunia, 19526	G. H. Hoxie.....	Cargill & McMillan, La Crosse, Wis.....	\$90.00	
2	Princess Girl, 216114	Yander & Tong.....	Cargill & McMillan, La Crosse, Wis.....	95.00	
3	Poppy Bell, 223001	Cosgrove Live Stock Co.....	L. R. Ruddick, St. Paul.....	60.00	
4	Ruth, 227991	Cosgrove Live Stock Co.....	W. H. Patterson, Worthington, Minn.....	45.00	
5	Katherine (twin)	Cosgrove Live Stock Co.....	W. H. Allen, Goodrich, N. D.....	50.00	
6	Kate (twin)	Cosgrove Live Stock Co.....	C. F. Wilkinson, La Valle, Wis.....	50.00	
7	Halloween Lass,	Cosgrove Live Stock Co.....	C. F. Wilkinson, La Valle, Wis.....	65.00	
8	Goldie Climax,	Cosgrove Live Stock Co.....	G. W. Patterson, Worthington, Minn.....	60.00	
9	Billy Hesold,	Cosgrove Live Stock Co.....	G. W. Patterson, Cordova, Minn.....	45.00	
10	Golden Liberty,	Cosgrove Live Stock Co.....	R. S. Ruddick.....	75.00	
11	Gold Bassalee,	Cosgrove Live Stock Co.....	R. S. Ruddick.....	45.00	
12	Silky Hesold,	Cosgrove Live Stock Co.....	Thos. Jamison, Cordova, Minn.....	50.00	
13	Improver's Lady (twin)	J. C. Andras, Jr.....	F. H. Overkamp, Osage, Iowa.....	50.00	
14	Lady Improver 3rd, 193739	J. C. Andras, Jr.....	R. S. Ruddick, St. Paul, Minn.....	65.00	
15	Prosper, 18083	J. C. Andras, Jr.....	W. H. Allen, Goodrich, N. D.....	80.00	
16	Improver Auswell 10th,	J. C. Andras, Jr.....	D. H. Powers, Delaware, Wis.....	100.00	
17	Ona 3rd, 91818	A. R. Haven.....	J. A. Peak & Sons, Winchester, Ill.....	95.00	
18	Miss Hummer 3rd,	A. R. Haven.....	W. J. Pickard, Richardson Center, Wis.....	100.00	
19	Miss Hummer 5th,	A. R. Haven.....	Nicholas Richert, Mabel	100.00	
20	Miss Hummer 6th,	A. R. Haven.....	G. W. Patterson, Worthington.....	55.00	
21	Tessie Archibald,	A. R. Haven.....	R. S. Ruddick, St. Paul.....	65.00	
22	Belle Archibald,	A. R. Haven.....	R. S. Ruddick, St. Paul.....	70.00	
23	Phyllis (twin),	A. R. Haven.....	R. S. Ruddick, St. Paul.....	95.00	
24	Hummer 5th,	A. R. Haven.....	R. S. Ruddick, St. Paul.....	80.00	
25	Hummer 10th,	A. R. Haven.....	John O'Conner, Ripley, Iowa.....	115.00	
26	Miss Edward 3rd,	A. R. Haven.....	W. H. Allen, Goodrich, N. D.....	70.00	
27	Ina Columbus	Tom. Smith.....	R. S. Ruddick, St. Paul.....	75.00	
28	Joyful C.	Tom. Smith.....	R. S. Ruddick, St. Paul.....	80.00	
29	Fond Wilton	Tom. Smith.....	J. F. Osminson & Son, Locust, Iowa.....	105.00	
30	Lady Roberta,	Tom. Smith.....	Burgy Bros., South Amana	130.00	
31	Lady Laurie,	Tom. Smith.....	Burgy Bros., South Amana	105.00	
32	Novena,	Tom. Smith.....	W. H. Allen, Goodrich, N. D.....	60.00	
33	Nevita,	W. H. Allen, Goodrich, N. D.....	W. H. Allen, Goodrich, N. D.....	80.00	
34	Robert Hur,	W. H. Allen, Goodrich, N. D.....	W. H. Allen, Goodrich, N. D.....	60.00	
35	Conqueror Willom,	W. H. Allen, Goodrich, N. D.....	C. F. Wilkinson, La Valle, Wis.....	90.00	
36	Perfection Lass,	W. H. Allen, Goodrich, N. D.....	G. W. Patterson, Worthington.....	85.00	
37	Boniface,	W. H. Allen, Goodrich, N. D.....	Wm Hoerter, Beaver Creek, Minn.....	50.00	
38	Lord Handsome,	W. H. Allen, Goodrich, N. D.....	C. F. Wilkinson, La Valle, Wis.....	150.00	
39	Commander,	W. H. Allen, Goodrich, N. D.....	W. H. Allen, Goodrich, N. D.....	55.00	
40	Imp. Conductor,	W. H. Allen, Goodrich, N. D.....	G. W. Patterson, Worthington, Minn.....	70.00	
41	General Jackson,	W. H. Allen, Goodrich, N. D.....	W. H. Allen, Goodrich, N. D.....	45.00	
42	Kaiser William,	W. H. Allen, Goodrich, N. D.....	Chris Smith, Armstrong, Minn.....	65.00	
43	Prince Henry,	W. H. Allen, Goodrich, N. D.....	W. H. Allen, Goodrich, N. D.....	50.00	

DIVISION C—SHEEP.

Premium awarded, \$2,036.00.

Superintendent: J. S. Bangs, South St. Paul.

Assistant Superintendent: Chas. Kerr, South Park.

CLASS 31.—DELAINE.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
E. M. Moore, Orchard Lake, Mich.....	\$10.00		
E. M. Moore, Orchard Lake, Mich.....		5.00	
W. S. Dixon, Brandon, Wis.....			3.00-
Ram, one year old—			
A. E. Green, Orchard Lake, Mich.....	10.00		
E. M. Moore, Orchard Lake, Mich.....		5.00	
W. S. Dixon, Brandon, Wis.....			3.00-
Ram lamb—			
E. M. Moore, Orchard Lake, Mich.....	10.00		
A. E. Green, Orchard Lake, Mich.....		5.00	
A. E. Green, Orchard Lake, Mich.....			3.00-
Ewe, two years old or over—			
A. E. Green, Orchard Lake, Mich.....	10.00		
E. M. Moore, Orchard Lake, Mich.....		5.00	
W. S. Dixon, Brandon, Wis.....			3.00-
Ewe, one year old—			
A. E. Green, Orchard Lake, Mich.....	10.00		
W. S. Dixon, Brandon, Wis.....		5.00	
E. M. Moore, Orchard Lake, Mich.....			3.00-
Ewe lamb—			
A. E. Green, Orchard Lake, Mich.....	10.00		
A. E. Green, Orchard Lake, Mich.....		5.00	
E. M. Moore, Orchard Lake, Mich.....			3.00-
Flock—			
A. E. Green, Orchard Lake, Mich.....	15.00		
E. M. Moore, Orchard Lake, Mich.....		10.00	
Breeder's Flock—			
A. E. Green, Orchard Lake, Mich.....	15.00		
E. M. Moore, Orchard Lake, Mich.....		10.00	

SWEEPSTAKES.

Ram, any age—	
W. S. Dixon, Brandon, Wis.....	10.00
Ewe, any age—	
W. S. Dixon, Brandon, Wis.....	10.00

CLASS 32—RAMBOUILLET.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
E. S. Dixon, Brandon, Wis.....	\$10.00		
E. M. Moore, Orchard Lake, Mich.....		5.00	
F. W. Harding, Waukesha, Wis.....			3.00-
Ram, one year old—			
E. M. Moore, Orchard Lake, Mich.....	10.00		
F. W. Harding, Waukesha, Wis.....		5.00	
F. W. Harding, Waukesha, Wis.....			3.00-

		1st Prem.	2nd Prem.	3rd Prem.
Ram lamb—				
W. S. Dixon, Brandon, Wis.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
E. M. Moore, Orchard Lake, Mich.....			3.00	
Ewe, two years old or over—				
E. M. Moore, Orchard Lake, Mich.....	10.00			
W. S. Dixon, Brandon, Wis.....		5.00		
E. M. Moore, Orchard Lake, Mich.....			3.00	
Ewe, one year old—				
W. S. Dixon, Brandon, Wis.....	10.00			
E. M. Moore, Orchard Lake, Mich.....		5.00		
F. W. Harding, Waukesha, Wis.....			3.00	
Ewe lamb—				
W. S. Dixon, Brandon, Wis.....	10.00			
E. M. Moore, Orchard Lake, Mich.....		5.00		
W. S. Dixon, Brandon, Wis.....			3.00	
Flock—				
W. S. Dixon, Brandon, Wis.....	15.00			
E. M. Moore, Orchard Lake, Mich.....		10.00		
Breeder's Flock—				
E. M. Moore, Orchard Lake, Mich.....	15.00			

SWEEPSTAKES.

Ram, any age—				
W. S. Dixon, Brandon, Wis.....	10.00			
Ewe, any age—				
W. S. Dixon, Brandon, Wis.....	10.00			

CLASS 33—COTSWOLD.

		1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—				
Lewis Bros., Camp Point, Ill.....	\$10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
F. W. Harding, Waukesha, Wis.....			3.00	
Ram, one year old—				
F. W. Harding, Waukesha, Wis.....	10.00			
Lewis Bros., Camp Point, Ill.....		5.00		
F. W. Harding, Waukesha, Wis.....			3.00	
Ram lamb—				
Lewis Bros., Camp Point, Ill.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
Lewis Bros., Camp Point, Ill.....			3.00	
Ewe, two years old or over—				
F. W. Harding, Waukesha, Wis.....	10.00			
Lewis Bros., Camp Point, Ill.....		5.00		
Lewis Bros., Camp Point, Ill.....			3.00	
Ewe, one year old—				
Lewis Bros., Camp Point, Ill.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
Lewis Bros., Camp Point, Ill.....			3.00	
Ewe lamb—				
F. W. Harding, Waukesha, Wis.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
Lewis Bros., Camp Point, Ill.....			3.00	
Flock—				
F. W. Harding, Waukesha, Wis.....	15.00			
Lewis Bros., Camp Point, Ill.....		10.00		

SWEEPSTAKES.

	Prem.	Prem.	Prem.
	Prem.	Prem.	Prem.
Ram, any age—			
Lewis Bros., Camp Point, Ill.....	10.00		
Ewe, any age—			
F. W. Harding, Waukesha, Wis.....	10.00		

CLASS 34—OXFORD DOWN.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	\$10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. E. Oliver, Worthington.....			3.00
Ram, one year old—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00
Ram lamb—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. E. Oliver, Worthington.....			3.00
Ewe, two years old or over—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. E. Oliver, Worthington.....			3.00
Ewe, one year old—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. E. Oliver, Worthington.....			3.00
Ewe lamb—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. E. Oliver, Worthington.....			3.00
Flock—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	15.00		
Geo. McKerrow & Son, Pewaukee, Wis.....		10.00	
Breeder's Flock—			
W. E. Oliver, Worthington.....	15.00		

SWEEPSTAKES.

Ram, any age—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Ewe, any age—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Best yearling ewe—			
W. E. Oliver, Worthington.....	10.00		
Best pen of four lambs—			
W. E. Oliver, Worthington.....	10.00		

CLASS 35—LEICESTER.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
William Young, Havana.....	\$10.00		
William Young, Havana.....		5.00	
Ram lamb—			
William Young, Havana.....	10.00		
William Young, Havana.....		5.00	

		1st Piem.	2nd Prem.	3rd Prem.
Ewe, two years old or over—				
William Young, Havana.....	10.00			
William Young, Havana.....		5.00		
William Young, Havana.....			3.00	
Ewe, one year old—				
William Young, Havana.....	10.00			
Ewe lamb—				
William Young, Havana.....	10.00			
William Young, Havana.....		5.00		
William Young, Havana.....			3.00	
Flock—				
William Young, Havana.....	12.00			
Breeder's Flock—				
William Young, Havana.....	12.00			

SWEETSTAKES.

Ram, any age—			
William Young, Havana.....		5.00	
Ewe, any age—			
William Young, Havana.....		5.00	

CLASS 36—SHROPSHIRE DOWN.

		1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—				
Geo. McKerrow & Sons, Pewaukee, Wis.....	\$10.00			
Chandler Bros., Kellerton, Iowa.....		5.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00	
Ram, one year old—				
F. W. Harding, Waukesha, Wis.....	10.00			
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00	
Ram lamb—				
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00	
Ewe, two years old or over—				
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00			
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00		
Chandler Bros., Kellerton, Iowa.....			3.00	
Ewe, one year old—				
F. W. Harding, Waukesha, Wis.....	10.00			
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00	
Ewe lamb—				
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00			
F. W. Harding, Waukesha, Wis.....		5.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....			3.00	
Flock—				
Geo. McKerrow & Sons, Pewaukee, Wis.....	15.00			
F. W. Harding, Waukesha, Wis.....		10.00		
Breeder's Flock—				
W. Woodard, Bloomer, Wis.....	15.00			
W. J. Boynton, Viola.....			10.00	

SWEETSTAKES.

Ram, any age—			
F. W. Harding, Waukesha, Wis.....		10.00	
Ewe, any age—			
F. W. Harding, Waukesha, Wis.....		10.00	

CLASS 37—MINNESOTA SHROPSHIRE DOWN.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
P. Lees, Excelsior.....	\$5.00		
W. J. Boynton, Viola.....		3.00	
P. Lees, Excelsior.....			2.00
Ram, one year old—			
W. J. Boynton, Viola.....	5.00		
Blanchard Bros., Winnebago.....		3.00	
P. Lees, Excelsior.....			2.00
Ram lamb—			
P. Lees, Excelsior.....	5.00		
P. Lees, Excelsior.....		3.00	
W. J. Boynton, Viola.....			2.00
Ewe, two years old or over—			
W. J. Boynton, Viola.....	5.00		
Blanchard Bros., Winnebago.....		3.00	
Blanchard Bros., Winnebago.....			2.00
Ewe, one year old—			
Blanchard Bros., Winnebago.....	5.00		
Blanchard Bros., Winnebago.....		3.00	
W. J. Boynton, Viola.....			2.00
Ewe lamb—			
W. J. Boynton, Viola.....	5.00		
Blanchard Bros., Winnebago.....		3.00	
Blanchard Bros., Winnebago.....			2.00
Flock, one ram, three ewes—			
W. J. Boynton, Viola.....	10.00		
Blanchard Bros., Winnebago.....		5.00	
Flock, four lambs under one year—			
P. Lees, Excelsior.....	10.00		
Blanchard Bros., Winnebago.....		5.00	

CLASS 38—SOUTHDOWN.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	\$10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Ram, one year old—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Ram lamb—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Ewe, two years old or over—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
W. S. Dixon, Brandon, Wis.....			3.00
Ewe, one year old—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Ewe lamb—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	10.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		5.00	
Flock—			
Geo. McKerrow & Sons, Pewaukee, Wis.....	15.00		
Geo. McKerrow & Sons, Pewaukee, Wis.....		10.00	

SWEEPSTAKES.

	1st Prem.	2nd Prem.	3rd Prem.
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Ram, any age—

Geo. McKerrow & Sons, Pewaukee, Wis..... 10.00

Ewe, any age—

Geo. McKerrow & Sons, Pewaukee, Wis..... 10.00

CLASS 39—DORSET (Horned).

	1st Prem.	2nd Prem.	3rd Prem.
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Ram, two years old or over—

W. J. Boynton, Viola..... \$10.00

W. J. Boynton, Viola..... 5.00

Ram, one year old—

W. J. Boynton, Viola..... 10.00

Ram lamb—

W. J. Boynton, Viola..... 10.00

W. J. Boynton, Viola..... 5.00

W. J. Boynton, Viola..... 3.00

Ewe, two years old or over—

W. J. Boynton, Viola..... 10.00

W. J. Boynton, Viola..... 5.00

W. J. Boynton, Viola..... 3.00

Ewe, one year old—

W. J. Boynton, Viola..... 10.00

W. J. Boynton, Viola..... 5.00

W. J. Boynton, Viola..... 3.00

Ewe lamb—

W. J. Boynton, Viola..... 10.00

W. J. Boynton, Viola..... 5.00

Flock—

W. J. Boynton, Viola..... 12.00

W. J. Boynton, Viola..... 10.00

Breeder's Flock—

W. J. Boynton, Viola..... 12.00

SWEEPSTAKES,

Ram, any age—

W. J. Boynton, Viola..... 5.00

Ewe, any age—

W. J. Boynton, Viola..... 5.00

CLASS 40—HAMPSHIRE.

	1st Prem.	2nd Prem.	3rd Prem.
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Ram, one year old—

Renk Bros., Sun Prairie, Wis..... \$10.00

Renk Bros., Sun Prairie, Wis..... 5.00

Ram lamb—

Renk Bros., Sun Prairie, Wis..... 10.00

Renk Bros., Sun Prairie, Wis..... 5.00

Ewe, two years old or over—

Renk Bros., Sun Prairie, Wis..... 10.00

Renk Bros., Sun Prairie, Wis..... 5.00

Ewe, one year old—

Renk Bros., Sun Prairie, Wis..... 10.00

Renk Bros., Sun Prairie, Wis..... 5.00

Ewe lamb—

Renk Bros., Sun Prairie, Wis..... 10.00

Renk Bros., Sun Prairie, Wis..... 5.00

Flock—

Renk Bros., Sun Prairie, Wis..... 15.00

SWEEPSTAKES.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, any age—			
Renk Bros., Sun Prairie, Wis.....	10.00		
Ewe, any age—			
Renk Bros., Sun Prairie, Wis.....	10.00		

CLASS 41—CHEVIOT.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
Geo. W. Parnell, Wingate, Ind.....	\$10.00		
William Young, Havana.....		5.00	
Ram, one year old—			
Geo. W. Parnell, Wingate, Ind.....	10.00		
Geo. W. Parnell, Wingate, Ind.....		5.00	
William Young, Havana.....			3.00
Ram lamb—			
Geo. W. Parnell, Wingate, Ind.....	10.00		
Geo. W. Parnell, Wingate, Ind.....		5.00	
Ewe, two years old or over—			
Geo. W. Parnell, Wingate, Ind.....	10.00		
Geo. W. Parnell, Wingate, Ind.....		5.00	
William Young, Havana.....			3.00
Ewe, one year old—			
Geo. W. Parnell, Wingate, Ind.....	10.00		
Geo. W. Parnell, Wingate, Ind.....		5.00	
Ewe lamb—			
Geo. W. Parnell, Wingate, Ind.....	10.00		
Geo. W. Parnell, Wingate, Ind.....		5.00	
William Young, Havana.....			3.00
Flock—			
Geo. W. Parnell, Wingate, Ind.....	12.00		
Geo. W. Parnell, Wingate, Ind.....		10.00	
Breeder's Flock—			
Geo. W. Parnell, Wingate, Ind.....	12.00		

SWEEPSTAKES.

Ram, any age—			
Geo. W. Parnell, Wingate, Ind.....	5.00		
Ewe, any age—			
Geo. W. Parnell, Wingate, Ind.....	5.00		

CLASS 42—LINCOLN.

	1st Prem.	2nd Prem.	3rd Prem.
Ram, two years old or over—			
Alex. A. Arnold & Sons, Galesville, Wis.....	\$10.00		
Alex. A. Arnold & Sons, Galesville, Wis.....		5.00	
Ram, one year old—			
Alex. A. Arnold & Sons, Galesville, Wis.....	10.00		
Wm. Malcolm, Bigelow.....		5.00	
Alex. A. Arnold & Sons, Galesville, Wis.....			3.00
Ram lamb—			
Alex. A. Arnold & Sons, Galesville, Wis.....	10.00		
Alex. A. Arnold & Sons, Galesville, Wis.....		5.00	
Alex. A. Arnold & Sons, Galesville, Wis.....			3.00
Ewe, two years old or over—			
Alex. A. Arnold & Sons, Galesville, Wis.....	10.00		
Wm. Malcolm, Bigelow.....		5.00	
Alex. A. Arnold & Sons, Galesville, Wis.....			3.00

		1st Prem.	2nd Prem.	3rd Prem.
Ewe, one year old—				
Alex. A. Arnold & Sons., Galesville, Wis.....	10.00			
Alex. A. Arnold & Sons, Galesville, Wis.....		5.00		
Alex. A. Arnold & Sons, Galesville, Wis.....			3.00	
Ewe lamb—				
Alex. A. Arnold & Sons., Galesville, Wis.....	10.00			
Alex. A. Arnold & Sons, Galesville, Wis.....		5.00		
Wm. Malcolm, Bigelow.....			3.00	
Flock—				
Alex. A. Arnold & Sons, Galesville Wis.....	15.00			
Alex. A. Arnold & Sons, Galesville, Wis.....		10.00		
Breeder's Flock—				
Alex. A. Arnold & Sons, Galesville Wis.....	15.00			

SWEEPSTAKES.

Ram, any age—			
Alex. A. Arnold & Sons, Galesville, Wis.....	10.00		
Ewe, any age—			
Alex. A. Arnold & Sons, Galesville, Wis.....	10.00		

CLASS 44—ANGORA GOATS.

		1st Prem.	2nd Prem.	3rd Prem.
Buck, two years old or over—				
J. McD. Randles, Waukesha, Wis.....	\$10.00			
K. E. Lathrop, Hugo.....		7.00		
Buck, one year old—				
J. McD. Randles, Waukesha, Wis.....	8.00			
K. E. Lathrop, Hugo.....		6.00		
Buck, kid—				
J. McD. Randles, Waukesha, Wis.....	8.00			
K. E. Lathrop, Hugo.....		6.00		
Doe, two years old or over—				
K. E. Lathrop, Hugo.....	10.00			
J. McD. Randles, Waukesha, Wis.....		7.00		
Doe, one year old—				
J. McD. Randles, Waukesha, Wis.....	8.00			
K. E. Lathrop, Hugo.....		6.00		
Doe, kid—				
K. E. Lathrop, Hugo.....	8.00			
J. McD. Randles, Waukesha, Wis.....		6.00		

CLASS 45—FEEDING ANIMALS (SHEEP AND SWINE).

		1st Prem.	2nd Prem.	3rd Prem.
Lambs for feeding, long wool—				
Wm. Young, Havana.....	\$15.00			
James Young, Havana.....		12.00		
Lambs for feeding, short wool—				
W. J. Boynton, Viola.....	15.00			
James Young, Havana.....		12.00		

SWEEPSTAKES.

Best single animal, any lot—		
W. J. Boynton, Viola.....	20.00	
Brood sow and litter, lard types—		
Wm. Malcolm, Bigelow.....	20.00	
T. E. Bly, Brewster.....		16.00
Best sow and litter of any breed or type—		
Wm. Malcolm, Bigelow.....	12.00	
T. E. Bly, Brewster.....		8.00

DIVISION D—SWINE.

Premiums awarded, \$1,697.00.

Superintendent: J. S. Bangs, South St. Paul.

Asst. Superintendent: D. A. Gaumnitz, St. Anthony Park.

CLASS 46—IMPROVED YORKSHIRE.

	1st Prem.	2nd Prem.	3rd Prem.
Boar, two years old and over—			
Thos. H. Canfield, Lake Park.....	\$15.00		
G. A. Forgerson, Rosemount.....		10.00	
Boar, one year old and under two—			
Thos. H. Canfield, Lake Park.....	15.00		
G. A. Forgerson, Rosemount.....		10.00	
Boar, six months old and under one year—			
Thos. H. Canfield, Lake Park.....	10.00		
Boar, under six months old, age considered—			
Thos. H. Canfield, Lake Park.....	10.00		
Thos. H. Canfield, Lake Park.....		5.00	
Thos. H. Canfield, Lake Park.....			3.00
Breeding sow, two years old or over—			
Thos. H. Canfield, Lake Park.....	15.00		
Thos. H. Canfield, Lake Park.....		10.00	
Breeding sow, one year old and under two—			
Thos. H. Canfield, Lake Park.....	15.00		
Thos. H. Canfield, Lake Park.....		10.00	
Daniel H. Poor, Hastings.....			5.00
Sow pig, six months old and under one year—			
Thos. H. Canfield, Lake Park.....	10.00		
Thos. H. Canfield, Lake Park.....		5.00	
Thos. H. Canfield, Lake Park.....			3.00
Sow pig, under six months, age considered—			
Thos. H. Canfield, Lake Park.....	10.00		
Thos. H. Canfield, Lake Park.....		5.00	
Thos. H. Canfield, Lake Park.....			3.00
Herd, to consist of one boar and three sows, one year old or over—			
Thos. H. Canfield, Lake Park.....	20.00		
Herd, one boar and three sows under one year—			
Thos. H. Canfield, Lake Park.....	20.00		
Thos. H. Canfield, Lake Park.....		10.00	
Thos. H. Canfield, Lake Park.....			5.00

SWEEPSTAKES.

Boar, any age—	
Thos. H. Canfield, Lake Park.....	15.00
Sow, any age—	
Thos. H. Canfield, Lake Park.....	15.00

CLASS 47—BERKSHIRE.

	1st Prem.	2nd Prem.	3rd Prem.
Board, two years old and over—			
W. D. Becker, Ft. Atkinson, Wis.....	\$15.00		
F. V. Briggs & Son, Stillwater.....		10.00	

	1st Prem.	2nd Prem.	3rd Prem.
Boar, one year old and under two—			
W. D. Becker, Ft. Atkinson, Wis.....	15.00		
C. D. Johnson, Nashua, Iowa.....		10.00	
Geo. E. Kelly, Mineral Point, Wis.....			5.00
Boar, six months old and under one year—			
C. D. Johnson, Nashua, Iowa.....	10.00		
C. D. Johnson, Nashua, Iowa.....		5.00	
C. D. Johnson, Nashua, Iowa.....			3.00
Boar, under six months, age considered—			
Farmer Farm, Farmington.....	10.00		
B. A. Imholt, Houlton, Wis.....		5.00	
B. A. Imholt, Houlton, Wis.....			3.00
Breeding sow, two years old or over—			
C. D. Johnson, Nashua, Iowa.....	15.00		
W. D. Becker, Ft. Atkinson, Wis.....		10.00	
F. V. Briggs & Son, Stillwater.....			5.00
Breeding sow, one year old, and under two—			
C. D. Johnson, Nashua, Iowa.....	15.00		
C. D. Johnson, Nashua, Iowa.....		10.00	
C. D. Johnson, Nashua, Iowa.....			5.00
Sow pig, six months old and under one year—			
C. D. Johnson, Nashua, Iowa.....	10.00		
C. D. Johnson, Nashua, Iowa.....		5.00	
W. D. Becker, Ft. Atkinson, Wis.....			3.00
Sow pig, under six months, age considered—			
Farmer Farm, Farmington.....	10.00		
W. D. Becker, Ft. Atkinson, Wis.....		5.00	
B. A. Imholt, Houlton, Wis.....			3.00
Herd, one boar and three sows, one year or over—			
C. D. Johnson, Nashua, Iowa.....	20.00		
W. D. Becker, Ft. Atkinson, Wis.....		10.00	
F. V. Briggs & Son, Stillwater.....			5.00
Herd, one boar and three sows under one year old—			
C. D. Johnson, Nashua, Iowa.....	20.00		
Farmer Farm, Farmington.....		10.00	
W. D. Becker, Ft. Atkinson, Wis.....			5.00

SWEEPSTAKES.

Boar, any age—	
W. D. Becker, Ft. Atkinson, Wis.....	15.00
Sow, any age—	
C. D. Johnson, Ft. Atkinson, Wis.....	15.00

CLASS 48—POLAND CHINAS.

	1st Prem.	2nd Prem.	3rd Prem.
Boar, two years old and over—			
Henry Bros., Le Mars, Iowa.....	\$15.00		
L. Lamberson, Warren.....		10.00	
Geo. Martin, Darlington, Wis.....			5.00
Boar, one year old and under two—			
John Francis & Son, New Lenox, Ill.....	15.00		
G. W. Wheeler, Mantorville.....		10.00	
W. A. Harding, Winnebago.....			5.00
Boar, six months old and under one year—			
John Francis & Son, New Lenox, Ill.....	10.00		
John Francis & Son, New Lenox, Ill.....		5.00	
Marks Bros., Amboy.....			3.00

	1st Prem.	2nd Prem.	3rd Prem.
Boar, under six months old, age considered—			
J. A. Ferguson, Annandale.....	10.00		
W. H. Reed, Whitewater, Wis.....		5.00	
Geo. Martin, Darlington, Wis.....			3.00
Breeding sow, two years old or over—			
John Francis & Son, New Lenox, Ill.....	15.00		
G. W. Wheeler, Mantorville.....		10.00	
John Francis & Son, New Lenox, Ill.....			5.00
Breeding sow, one year old and under two years—			
John Francis & Son, New Lenox, Ill.....	15.00		
G. W. Wheeler, Mantorville.....		10.00	
E. J. Cowles, West Concord.....			5.00
Sow pig, six months old and under one year—			
Henry Bros., Le Mars, Iowa.....	10.00		
Geo. Martin, Darlington, Wis.....		5.00	
W. J. Brand, New Richmond, Wis.....			3.00
Sow pig, under six months old, age considered—			
G. W. Wheeler, Mantorville.....	10.00		
J. A. Ferguson, Annandale.....		5.00	
E. J. Cowles, West Concord.....			3.00
Herd, to consist of one boar and three sows one year old or over—			
G. W. Wheeler, Mantorville.....	20.00		
Henry Bros., Le Mars, Iowa.....		10.00	
John Francis & Son, New Lenox, Ill.....			5.00
Herd, to consist of one boar and 3 sows under one year old—			
John Francis & Son, New Lenox, Ill.....	20.00		
Henry Bros., Le Mars, Iowa.....		10.00	
L. P. Martiny, Chippewa Falls, Wis.....			5.00

SWEEPSTAKES.

Boar, any age—		
John Francis & Son, New Lenox, Ill.....	15.00	
Sow, any age—		
John Francis & Son, New Lenox, Ill.....	15.00	

CLASS 49—DUROC JERSEY.

	1st Prem.	2nd Prem.	3rd Prem.
Boar, two years old and over—			
Wm. Malcolm, Bigelow.....	15.00		
Reed, Wright & Co., Whitewater, Wis.....		10.00	
Harmon Gruver, Brewster.....			5.00
Boar, one year old, and under two—			
Easton Bros., Galva, Iowa.....	15.00		
W. H. Reed, Whitewater, Wis.....		10.00	
Edmonds, Shade & Co., Kingsley, Iowa.....			5.00
Boar, six months, and under one year—			
J. E. Ware, Portsmouth, Iowa.....	10.00		
Edmonds, Shade & Co., Kingsley, Iowa.....		5.00	
T. E. Bly, Brewster			3.00
Boar, under six months, age considered—			
Reed, Wright & Co., Whitewater, Wis.....	10.00		
W. H. Reed, Whitewater, Wis.....		5.00	
T. E. Bly, Brewster.....			3.00
Breeding sow, two years old or over—			
Edmonds, Shade & Co., Kingsley, Iowa.....	15.00		
Easton Bros., Galva, Iowa.....		10.00	
Wm. Malcolm, Bigelow			5.00

	1st Prem.	2nd Prem.	3rd Prem.
Breeding sow, one year old, and under two—			
Edmonds, Shade & Co., Kingsley, Iowa.....	15.00		
W. H. Reed, Whitewater, Wis.....		10.00	
Easton Bros., Galva, Iowa.....			5.00
Sow pig, six months old, and under one year—			
Riel & Cooper, Ferris, Ill.....	10.00		
Edmonds, Shade & Co., Kingsley, Iowa.....		5.00	
Riel & Cooper, Ferris, Ill.....			3.00
Sow pig, under six months old, age considered—			
Riel & Cooper, Ferris, Ill.....	10.00		
Easton Bros., Galva, Iowa.....		5.00	
Edmonds, Shade & Co., Kingsley, Iowa.....			3.00
Herd, 1 boar and 3 sows, 1 year or over—			
Edmonds, Shade & Co., Kingsley, Iowa.....	20.00		
Easton Bros., Galva, Iowa.....		10.00	
Wm. Malcolm, Bigelow.....			5.00
Herd, 1 boar and 3 sows, under 1 year—			
Easton Bros., Galva, Iowa.....	20.00		
Reed, Wright & Co., Whitewater, Wis.....		10.00	
Riel & Cooper, Ferris, Ill.....			5.00

SWEEPSTAKES.

Boar, any age—			
Wm. Malcolm, Bigelow.....	15.00		
Sow, any age—			
Edmonds, Shade & Co., Kingsley, Iowa.....	15.00		

CLASS 50—CHESTER WHITE.

	1st Prem.	2nd Prem.	3rd Prem.
Boar, two years old and over—			
Humbert & White Co., Nashua, Iowa.....	\$15.00		
Humbert & White Co., Nashua, Iowa.....		10.00	
W. J. Martin, Darlington, Wis.....			5.00
Boar, one year old, and under two—			
Humbert & White Co., Nashua, Iowa.....	15.00		
Fred Luchsinger, Jr., Newport.....		10.00	
N. A. Rauck, Niota, Ill.....			5.00
Boar, six months old, and under one year—			
Humbert & White Co., Nashua, Iowa.....	10.00		
Humbert & White Co., Nashua, Iowa.....		5.00	
Fred Luchsinger, Jr., Newport.....			3.00
Breeding sow, two years old or over—			
Humbert & White Co., Nashua, Iowa.....	15.00		
Humbert & White Co., Nashua, Iowa.....		10.00	
Humbert & White Co., Nashua, Iowa.....			5.00
Breeding sow, one year and under two—			
Humbert & White Co., Nashua, Iowa.....	15.00		
Humbert & White Co., Nashua, Iowa.....		10.00	
Humbert & White Co., Nashua, Iowa.....			5.00
Sow pig, six months old and under one year—			
Humbert & White Co., Nashua, Iowa.....	10.00		
P. B. Lake, Moscow, Iowa.....		5.00	
P. B. Lake, Moscow, Iowa.....			3.00
Sow pig, under six months old—			
Humbert & White Co., Nashua, Iowa.....	10.00		
Humbert & White Co., Nashua, Iowa.....		5.00	
N. A. Rauck, Niota, Ill.....			3.00

	1st Prem.	2nd Prem.	3rd Prem.
Herd, to consist of one boar and three sows, one year old or over—			
Humbert & White Co., Nashua, Iowa.....	20.00		
Humbert & White Co., Nashua, Iowa.....		10.00	
Fred J. Luchsinger, Newport.....			5.00
Herd, to consist of one boar and three sows, under one year—			
Humbert & White Co., Nashua, Iowa.....	20.00		
P. B. Lake, Moscow, Iowa.....		10.00	
Humbert & White Co., Nashua, Iowa.....			5.00

SWEEPSTAKES.

Boar, any age—			
Humbert & White Co., Nashua, Iowa.....	15.00		
Sow, any age—			
Humbert & White Co., Nashua, Iowa.....	15.00		

CLASS 51—TAMWORTH.

	1st Prem.	2nd Prem.	3rd Prem.
Boar, two years old, and over—			
Frank Thorner, Carthage, Ill.....	\$15.00		
A. N. Kelly, Mineral Point, Wis.....		10.00	
Boar, one year and under two—			
Frank Thorner, Carthage, Ill.....	15.00		
A. N. Kelly, Mineral Point, Wis.....		10.00	
Breeding sow, two years or over—			
A. N. Kelly, Mineral Point, Wis.....	15.00		
A. N. Kelly, Mineral Point, Wis.....		10.00	
Breeding sow, one year old and under two—			
Frank Thorner, Carthage, Ill.....	15.00		
Frank Thorner, Carthage, Ill.....		10.00	
Sow pig, under one year—			
A. N. Kelly, Mineral Point, Wis.....	10.00		
Frank Thorner, Carthage, Ill.....		5.00	
Herd, one boar and three sows, one year or over—			
Frank Thorner, Carthage, Ill.....	20.00		
A. N. Kelly, Mineral Point, Wis.....		10.00	
Herd, one boar and three sows, under one year—			
Frank Thorner, Carthage, Ill.....	20.00		
A. N. Kelly, Mineral Point, Wis.....		10.00	

SWEEPSTAKES.

Boar, any age—			
Frank Thorner, Carthage, Ill.....	15.00		
Sow, any age—			
Frank Thorner, Carthage, Ill.....	15.00		

CLASS 52—SWEEPSTAKES.

	1st Prem.	2nd Prem.	3rd Prem.
Sow, any breed, with largest number and best litter of pigs—			
Wm. Malcolm, Bigelow.....	20.00		
L. P. Martiny, Chippewa Falls, Wis.....		10.00	
T. E. Bly, Brewster.....			5.00

CLASS 53—SWEEPSTAKES.

	1st Prem.	2nd Prem.	3rd Prem.
Best exhibit of swine, owned and bred by a Minnesota exhibitor—			
Thos. H. Canfield, Lake Park.....	25.00		
G. W. Wheeler, Mantorville.....		15.00	
Wm. Malcolm, Bigelow.....			10.00

SWIFT & COMPANY SPECIAL.

Special pen of three barrows weighing 250 to 350 pounds—

Harmon Gruver, Brewster.....	\$15.00
Daniel H. Poor, Hastings.....	10.00

DIVISION E—POULTRY.

Premiums awarded \$806.00

Superintendent—Leslie Parlin, St. Paul.

CLASS 55—DOMESTIC FOWLS.

	1st Prem.	2nd Prem.	3rd Prem.
Brahma, light, Asiatic—			
E. G. Roberts, Ft. Atkinson, Wis.....	\$2.00		
Model Poultry Yards, Minneapolis.....		1.00	
Model Poultry Yards, Minneapolis.....			.50
Brahma, dark—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Brahma, light, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
Brahma, dark, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
Cochin, buff—			
W. M. Bean, Anoka.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Cochin, buff, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Cochin, partridge—			
John P. Peterson, St. Paul.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
John P. Peterson, St. Paul.....			.50
Cochin, partridge, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
Cochin, white—			
E. G. Roberts, Ft. Atkinson.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Cochin, white, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	

		1st Prem.	2nd . Prem.	3rd Prem.
Cochin, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Cochin, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
Langshan, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Langshan, white—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
AMERICAN.				
Plymouth Rocks, barred—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Plymouth Rocks, barred, chicks—				
Herman Koehler, Zumbrota.....	2.00			
Herman Koehler, Zumbrota.....		1.00		
Cyril E. Dixon, Northfield.....			.50	
Plymouth Rocks, buff—				
Ralph Whithey, Stewartville.....	2.00			
Henry Hess, Winona.....		1.00		
Success Poultry Yards, Chatfield.....			.50	
Plymouth Rocks, buff, chicks—				
M. E. Ellison & Son, St. Anthony Park.....	2.00			
Aug. Fieger, St. Paul.....		1.00		
Aug. Fieger, St. Paul.....			.50	
Plymouth Rocks, white—				
Woodend Farm, St. Bonafacelus.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Leon B. Losey, Minneapolis.....			.50	
Plymouth Rocks, white, chicks—				
Woodend Farm, St. Bonafacelus.....	2.00			
Woodend Farm, St. Bonafacelus.....		1.00		
Edward E. Smith, Minneapolis.....			.50	
Wyandottes, silver laced—				
Wm. M. Swaggart, Wayzata.....	2.00			
Mrs. Martin Bender, Winona.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Wyandottes, silver laced, chicks—				
Wm. M. Swaggart, Wayzata.....	2.00			
Wm. M. Swaggart, Wayzata.....		1.00		
Mrs. Martin Bender, Winona.....			.50	
Wyandottes, golden laced—				
Clive H. Owen, Minneapolis.....	2.00			
Clive H. Owen, Minneapolis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Wyandottes, golden laced, chicks—				
Clive H. Owen, Minneapolis.....	2.00			
Clive H. Owen, Minneapolis.....		1.00		
Clive H. Owen, Minneapolis.....			.50	
Wyandottes, silver penciled—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00	1.00		

		1st Prem.	2nd Prem.	3rd Prem.
Wyandottes, silver penciled, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Wyandottes, white—				
E. S. Person, Zumbrota.....	2.00			
E. S. Person, Zumbrota.....		1.00		
Edward Lynch & Son, St. Paul.....			.50	
Wyandottes, white, chicks—				
E. S. Person, Zumbrota.....	2.00			
E. S. Person, Zumbrota.....		1.00		
Ralph Whitney, Stewartville.....			.50	
Wyandottes, buff—				
Success Poultry Yards, Chatfield.....	2.00			
Success Poultry Yards, Chatfield.....		1.00		
W. M. Bean, Anoka.....				
Wyandottes, buff, chicks—				
Henry Hess, Winona.....	2.00			
Henry Hess, Winona.....		1.00		
Henry Hess, Winona.....			.50	
Wyandottes, black—				
F. W. Prouse, Minneapolis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Wyandottes, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
Wyandottes, partridge—				
John Stoudt & Son, Zumbrota.....	2.00			
M. F. Stellwagen & Son, Minneapolis.....		1.00		
Margaret Hope, St. Paul.....			.50	
Wyandottes, partridge, chicks—				
Margaret Hope, St. Paul.....	2.00			
John Stoudt & Son, Zumbrota.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Wyandottes, Columbian, chicks—				
Clive H. Owen, Minneapolis.....	2.00			
Clive H. Owen, Minneapolis.....		1.00		
Clive H. Owen, Minneapolis.....			.50	
Javas, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Wm. Eberly, Anoka.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Javas, black, chicks—				
Wm. Eberly, Anoka.....	2.00			
Wm. Eberly, Anoka.....		1.00		
Wm. Eberly, Anoka.....			.50	
Javas, mottled, chicks—				
Mrs. J. B. Jardine, Wayzata.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Javas, white, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Dominiques, American—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Dominiques, American, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			

		1st Prem.	2nd Prem.	3rd Prem.
Jersey Blues—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
Reds, R. I. S. C.—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
E. G. Roberts, Ft. Atkinson, Wis.....			1.00	
F. W. Niesman, Freeport, Ill.....				.50
Reds, R. I. S. C., chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
E. G. Roberts, Ft. Atkinson, Wis.....			1.00	
C. M. Bryant, Sauk Center.....				.50
Reds, R. I. R. C.—				
M. C. Millet, Rochester.....		2.00		
J. D. McCluskey, Minneapolis.....			1.00	
G. C. Lillie, Minneapolis .....				.50
Reds, R. I. R. C., chicks—				
C. M. Bryant, Sauk Center.....		2.00		
M. C. Millet, Rochester.....			1.00	
M. C. Millet, Rochester.....				.50

MEDITERRANEAN.

		1st Prem.	2nd Prem.	3rd Prem.
Leghorn, single comb, brown—				
M. Sandin, Hamline.....		2.00		
L. Walter Lindgren, St. Paul.....			1.00	
M. Sandin, Hamline.....				.50
Leghorn, single comb, brown, chicks—				
McKinney Bros., St. Paul.....		2.00		
McKinney Bros., St. Paul.....			1.00	
L. Walter Lindgren, St. Paul.....				.50
Leghorn, single rose comb, brown—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
F. W. Niesman, Freeport, Ill.....			1.00	
Wm. Cowden, Anoka.....				.50
Leghorn, single rose comb, brown, chicks—				
Fletcher Rockwood, Minneapolis.....		2.00		
E. G. Roberts, Ft. Atkinson, Wis.....			1.00	
F. W. Niesman, Freeport, Ill.....				.50
Leghorn, single comb, white—				
Henry Schroeder, St. Paul.....		2.00		
Henry Schroeder, St. Paul.....			1.00	
E. G. Roberts, Ft. Atkinson, Wis.....				.50
Leghorn, single comb, white, chicks—				
Henry Schroeder, St. Paul.....		2.00		
Henry Schroeder, St. Paul.....			1.00	
Henry Schroeder, St. Paul.....				.50
Leghorn, rose comb, white—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
Leghorn, rose comb, white, chicks—				
F. W. Niesman, Freeport, Ill.....		2.00		
E. G. Roberts, Ft. Atkinson, Wis.....			1.00	
Chas. S. Tubbs, Stewartville.....				.50
Leghorn, black—				
E. G. Roberts, Ft. Atkinson, Wis.....		2.00		
J. C. Laffin, Minneapolis.....			1.00	
J. C. Laffin, Minneapolis.....				.50

		1st Prem.	2nd Prem.	3rd Prem.
Leghorn , black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Wm. Eberly, Anoka.....			.50	
Leghorn , buff, single comb—				
W. M. Bean, Anoka.....	2.00			
W. M. Bean, Anoka.....		1.00		
Alf. A. Zimmer, Waltham.....			.50	
Leghorn , buff, single comb, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
W. M. Bean, Anoka.....		1.00		
W. M. Bean, Anoka.....			.50	
Leghorn , silver duckwing—				
R. H. Russell, Stewartville.....	2.00			
Minorca , black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
F. W. Prouse, Minneapolis.....			.50	
Minorca , black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Minorca , white—				
F. W. Niesman, Freeport, Ill.....	2.00			
A. T. Cleland, Minneapolis.....		1.00		
A. T. Cleland, Minneapolis.....			.50	
Minorca , white, chicks—				
L. I. McFarlane, Minneapolis.....	2.00			
T. H. Colwell, St. Louis Park.....		1.00		
T. H. Colwell, St. Louis Park.....			.50	
Minorca , black, rose comb—				
F. W. Niesman, Freeport, Ill.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Minorca , black, rose comb, chicks—				
E. J. Dodge, Stewartville.....	2.00			
E. J. Dodge, Stewartville.....		1.00		
E. J. Dodge, Stewartville.....			.50	
Anconas , mottled—				
F. W. Niesman, Freeport, Ill.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Anconas , mottled, chicks—				
F. W. Niesman, Freeport, Ill.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Smith Brothers, Stewartville.....			.50	
Andalusian , blue—				
F. W. Niesman, Freeport, Ill.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
H. Hudson, Minneapolis.....			.50	
Andalusian , blue, chicks—				
H. Hudson, Minneapolis.....	2.00			
Wm. Eberly, Anoka		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Spanish Black —				
Oscar Wolf, Minneapolis.....	2.00			
Wm. Eberly, Anoka.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	

	1st Prem.	2nd Prem.	3rd Prem.
Spanish Black, chicks—			
Oscar Wolf, Minneapolis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Wm. Eberly, Anoka .....			.50

HAMBURG.

	1st Prem.	2nd Prem.	3rd Prem.
Hamburgs, golden spangled—			
E. G. Roberts, Ft. Atkinson, Wis.....	\$2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Hamburgs, golden spangled, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Hamburgs, silver spangled—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
R. F. Jones, Minneapolis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Hamburgs, silver spangled, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Jas. Murray, St. Cloud.....			.50
Hamburgs, golden penciled—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Hamburgs, golden penciled, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Hamburgs, silver penciled—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Hamburgs, silver penciled, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Hamburgs, black—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Hamburgs, black, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Red Caps—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Red Caps, chicks—			
E. J. Dodge, Stewartville.....	2.00		
E. J. Dodge, Stewartville.....		1.00	
E. J. Dodge, Stewartville.....			.50

POLISH.

	1st Prem.	2nd Prem.	3rd Prem.
Black Polish, white crested—			
F. W. Niesman, Freeport, Ill.....	\$2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
E. G. Roberts, Ft. Atkinson, Wis.....			.50
Black Polish, white crested, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
R. F. Jones, Minneapolis.....		1.00	
E. G. Roberts, Ft. Atkinson, Wis.....			.50

		1st Prem.	2nd Prem.	3rd Prem.
Polish, golden—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
Polish, golden, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Polish, silver—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....			1.00	
Polish, silver, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Polish, white—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
John P. Peterson, St. Paul.....				.50
Polish, white, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Golden Polish, bearded—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Golden Polish, bearded, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Silver Polish, bearded—				
F. W. Niesman, Freeport, Ill.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Silver Polish, bearded, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
White Polish, bearded—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
White Polish, bearded, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Polish, buff, laced—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....				.50
Polish, buff laced, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		

ENGLISH.

		1st Prem.	2nd Prem.	3rd Prem.
Dorking, silver gray—				
F. W. Prouse, Minneapolis.....	\$2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
F. W. Niesman, Freeport, Ill.....				.50
Dorking, silver gray, chicks—				
F. W. Niesman, Freeport, Ill.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
Dorking, colored—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Dorking, colored, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Orpington, buff, single comb—				
W. M. Bean, Anoka.....	2.00			
Alfred A. Ziemer, Waltham.....		1.00		
F. W. Niesman, Freeport, Ill.....				.50

		1st Prem.	2nd Prem.	3rd Prem.
Orpington, buff, single comb, chicks—				
Alf. A. Ziemer, Waltham.....	2.00			
C. H. Anderson, Chatfield.....		1.00		
H. B. Fletcher, Minneapolis.....			.50	
Orpington, buff, rose comb—				
W. M. Bean, Anoka.....	2.00			
W. M. Bean, Anoka.....		1.00		
Orpington, black, single comb—				
R. H. Russell, Stewartville.....	2.00			
F. W. Niesman, Freeport, Ill.....			1.00	
Orpington, black, single comb, chicks—				
R. H. Russell, Stewartville.....	2.00			
Orpington, white, single comb, chicks—				
L. G. Tubbs, Stewartville.....	2.00			
L. G. Tubbs, Stewartville.....			1.00	

FRENCH.

		1st Prem.	2nd Prem.	3rd Prem.
Houdon, mottled—				
Oscar Wolf, Minneapolis.....	\$2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
H. Hudson, Minneapolis.....			.50	
Houdan, mottled, chicks—				
Oscar Wolf, Minneapolis.....	2.00			
Oscar Wolf, Minneapolis.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Crevecoeur, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Fleche, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Fleche, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			

CLASS 56—GAME FOWLS.

		1st Prem.	2nd Prem.	3rd Prem.
Red Games, black breasted—				
R. F. Jones, Minneapolis.....	\$2.00			
Red Games, black breasted, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Red Games, brown—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Red Games, brown, chicks—				
Jas. Murray, St. Cloud.....	2.00			
Jas. Murray, St. Cloud.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Duckwing, golden, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Duckwing, silver, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Pyle, red—				
F. W. Niesman, Freeport, Ill.....	2.00			
Game, birchen—				
R. F. Jones, Minneapolis.....	2.00			
Games, Cornish Indian—				
F. H. Williams, Minneapolis.....	2.00			
F. H. Williams, Minneapolis.....		1.00		
F. H. Williams, Minneapolis.....			.50	

	1st Prem.	2nd Prem.	3rd Prem.
Games, Cornish Indian, chicks—			
F. H. Williams, Minneapolis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
F. H. Williams, Minneapolis.....			.50
Games, Cornish Indian, white—			
F. W. Niesman, Freeport, Ill.....	2.00		
Games, Cornish Indian, white, chicks—			
C. Y. Gibbs, Wayzata.....	2.00		
C. Y. Gibbs, Wayzata.....		1.00	

CLASS 56—GAME BANTAMS.

	1st Prem.	2nd Prem.	3rd Prem.
Red Game, black breasted—			
F. W. Niesman, Freeport, Ill.....	\$2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Edward Lynch & Son, St. Paul.....			.50
Red Game, black breasted, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Red Game, brown—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Red Game, brown, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Duckwing, golden—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Geo. J. Reinhardt, St. Paul.....			.50
Duckwing, golden, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Duckwing, silver—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Duckwing, silver, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Pyle, red—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Pyle, red, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Game, Bantam, white—			
Geo. J. Reinhardt, St. Paul.....			1.00
Game, Bantam, birchen—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Game, Bantam, birchen—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		

BANTAMS—Other than Game.

	1st Prem.	2nd Prem.	3rd Prem.
Seabright, golden—			
E. G. Roberts, Ft. Atkinson, Wis.....	\$2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
R. F. Jones, Minneapolis.....			.50
Seabright, golden, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
A. L. McCall, Minneapolis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50

		1st Prem.	2nd Prem.	3rd Prem.
Seabright, silver—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Seabright, silver, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Laurence F. Everitt, Minneapolis.....			.50	
Rose Combed, white—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Rose Combed, white, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Rose Combed, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Rose Combed, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Booted, white—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Booted, white, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Cochin, buff—				
Edward Lynch & Son, St. Paul.....	2.00			
W. M. Bean, Anoka.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Cochin, buff, chicks—				
W. M. Bean, Anoka.....	2.00			
W. M. Bean, Anoka.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Cochin, partridge—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Cochin, partridge, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Cochin, white—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
Edward Lynch & Son, St. Paul.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	
Cochin, white, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
F. W. Niesman, Freeport, Ill.....		1.00		
E. G. Roberts, Ft. Atkinson, Wis.....			.50	
Cochin, black—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
Edward Lynch & Son, St. Paul.....			.50	
Cochin, black, chicks—				
E. G. Roberts, Ft. Atkinson, Wis.....	2.00			
E. G. Roberts, Ft. Atkinson, Wis.....		1.00		
F. W. Niesman, Freeport, Ill.....			.50	

	1st Prem.	2nd Prem.	3rd Prem.
Japanese, black tailed—			
F. W. Niesman, Freeport, Ill.....	2.00		
Japanese, black tailed, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Japanese, white—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Japanese, white, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
White Polish, white crested—			
R. F. Jones, Minneapolis.....	2.00		

MISCELLANEOUS.

	1st Prem.	2nd Prem.	3rd Prem.
Sumatra, black—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Sumatra, black, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. H. Williams, Minneapolis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Silky, white—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Silky, white, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Frizzles, any color—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Frizzles, any color, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Rumples, any color—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Rumples, any color, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	

CLASS 57—TURKEYS.

	1st Prem.	2nd Prem.	3rd Prem.
Bronze—			
F. W. Niesman, Freeport, Ill.....	2.00		
Narragansett—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Narragansett, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Slate—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
White—			
James J. Lorentzen, Clark's Grove.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	

	1st Prem.	2nd Prem.	3rd Prem.
White, chicks—			
James J. Lorentzen, Clark's Grove.....	2.00		
Black—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Black, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		

DUCKS.

	1st Prem.	2nd Prem.	3rd Prem.
Pekin, white—			
A. W. Edson, Austin.....	2.00		
R. F. Jones, Minneapolis.....		1.00	
G. J. Trester, Rushford.....			.50
Pekin, white, chicks—			
Margaret Hope, St. Paul.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
W. M. Bean, Anoka.....			.50
Aylesbury, white—			
F. W. Niesman, Freeport, Ill.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Aylesbury, white, chicks—			
F. W. Niesman, Freeport, Ill.....	2.00		
Rouen, colored—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
R. F. Jones, Minneapolis.....			.50
Rouen, colored, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Cayuka, black—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Cayuka, black, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Muscovey, colored—			
R. F. Jones, Minneapolis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
E. G. Roberts, Ft. Atkinson, Wis.....			.50
Muscovey, colored, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Muscovey, white—			
Edward Lynch & Son, St. Paul.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Muscovey, white, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Edward Lynch & Son, St. Paul.....		1.00	
Edward Lynch & Son, St. Paul.....			.50
Call, gray—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
R. F. Jones, Minneapolis.....		1.00	
F. W. Niesman, Freeport, Ill.....			.50
Call, gray, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Call, white—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
East Indian, black—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		

	1st Prem.	2nd Prem.	3rd Prem.
East Indian, black, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
White crested—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
R. F. Jones, Minneapolis.....		1.00	
White crested, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Indian Runner—			
R. F. Jones, Minneapolis.....	2.00		
E. G. Roberts, Ft. Atkinson, Wis.....		1.00	
Indian Runner, chicks—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		

CLASS 57—GEESE.

	1st Prem.	2nd Prem.	3rd Prem.
Toulouse, Gray—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Paul H. Kuehn, St. Paul.....			.50
Emdbden, white—			
A. W. Edson, Austin.....	2.00		
F. W. Niesman, Freeport, Ill.....		1.00	
Ralph Whitney, Stewartville.....			.50
Emdbden, white, chicks—			
A. W. Edson, Austin.....	2.00		
African, gray—			
James J. Lorentzen, Clark's Grove.....	2.00		
Chinese, brown—			
E. G. Roberts, Ft. Atkinson, Wis.....	2.00		
Chinese, white—			
F. W. Niesman, Freeport, Ill.....	2.00		

CLASS 58—ORNAMENTAL AND PET STOCK.

	1st Prem.	2nd Prem.	3rd Prem.
White Guineas—			
E. G. Roberts, Ft. Atkinson, Wis.....	1.00		
R. F. Jones, Minneapolis.....		.50	
Pearl—			
R. F. Jones, Minneapolis.....	1.00		
E. G. Roberts, Ft. Atkinson, Wis.....		.50	
Pea Fowls—			
R. F. Jones, Minneapolis.....	1.00		
Best display of pigeons—			
W. A. Paggett, Anoka.....	8.00		
Edward Lynch & Son, St. Paul.....		5.00	
W. M. Bean, Anoka.....			3.00
Best exhibit of rabbits—			
R. F. Jones, Minneapolis.....	3.00		
Pheasants, not less than six varieties—			
R. F. Jones, Minneapolis.....	25.00		

CLASS 59.

Best breeding pen (for fowls only) one male and four females.

		1st Prem.	2nd Prem.	3rd Prem.
No. 1	Light Brahmans—			
	E. G. Roberts, Ft. Atkinson, Wis.....	3.00		
No. 3	Cochin, buff—			
	W. M. Bean, Anoka.....	3.00		
	E. G. Roberts, Ft. Atkinson, Wis.....		2.00	
	W. M. Bean, Anoka.....			1.00
No. 7—				
	Model Poultry Yards, Minneapolis.....	3.00		
No. 9—				
	E. G. Roberts, Ft. Atkinson, Wis.....	3.00		
	Herman Koehler, Zumbrota.....		2.00	
No. 10—				
	Success Poultry Yards, Chatfield.....	3.00		
	W. M. Bean, Anoka.....		2.00	
	M. E. Ellison & Son, St. Anthony Park.....			1.00
No. 12—				
	Woodend Farm, St. Bonifaceus.....	3.00		
	Leon B. Losey, Minneapolis.....		2.00	
	Leon B. Losey, Minneapolis.....			1.00
No. 13—				
	Wm. M. Swaggart, Wayzata.....	3.00		
	Mrs. Martin Bender, Winona.....		2.00	
No. 14—				
	Clive H. Owen, Minneapolis.....	3.00		
	F. W. Niesman, Freeport, Ill.....		2.00	
	E. G. Roberts, Ft. Atkinson, Wis.....			1.00
No. 15—				
	E. G. Roberts, Ft. Atkinson, Wis.....	3.00		
No. 16—				
	Ralph Whitney, Stewartville.....	3.00		
	E. S. Person, Zumbrota.....		2.00	
No. 17—				
	W. M. Bean, Anoka.....	3.00		
	Success Poultry Yards, Chatfield.....		2.00	
	W. M. Bean, Anoka.....			1.00
No. 19—				
	Margaret Hope, St. Paul.....	3.00		
	M. F. Stellwagen & Son, Minneapolis.....		2.00	
	R. F. Jones, Minneapolis.....			1.00
No. 27—				
	T. D. McCluskey, Minneapolis.....	3.00		
No. 29—				
	M. Sanin, Hamline.....	3.00		
No. 30—				
	Wm. Cowden, Anoka.....	3.00		
	Fletcher Rockwood, Minneapolis.....		2.00	
	Wm. Cowden, Anoka.....			1.00
No. 31—				
	Henry Schroeder, St. Paul.....	3.00		
	Henry Schroeder, St. Paul.....		2.00	
	Henry Hintermister, Jr., Highwood.....			1.00
No. 32—				
	E. G. Roberts, Ft. Atkinson, Wis.....	3.00		
	F. W. Niesman, Freeport, Ill.....		2.00	

		1st Prem.	2nd Prem.	3rd Prem.
No. 33—	J. C. Laffin, Minneapolis.....	3.00		
	J. C. Laffin, Minneapolis.....		2.00	
No. 35—	W. M. Bean, Anoka.....	3.00		
	W. M. Bean, Anoka.....		2.00	
No. 36—	W. M. Bean, Anoka.....	3.00		
No. 38—	F. W. Prouse, Minneapolis.....	3.00		
	F. W. Niesman, Freeport, Ill.....		2.00	
	E. G. Roberts, Ft. Atkinson, Wis.....			1.00
No. 42—	H. Hudson, Minneapolis.....	3.00		
No. 45—	R. F. Jones, Minneapolis.....	3.00		
No. 61—	F. W. Prouse, Minneapolis.....	3.00		
No. 68—	Oscar Wolf, Minneapolis.....	3.00		
	Oscar Wolf, Minneapolis.....		2.00	
No. 79—	F. H. Williams, Minneapolis.....	3.00		
	F. H. Williams, Minneapolis.....		2.00	
	F. H. Williams, Minneapolis.....			1.00
No. 80—	C. Y. Gibbs, Wayzata.....	3.00		
Best incubator in operation—	Pike & Co., Minneapolis.....	10.00		
	International Stock Food Co., Minneapolis.....		5.00	
Best brooder in operation—	International Stock Food Co., Minneapolis.....	5.00		
	Pike & Co., Minneapolis.....		3.00	

DIVISION F—BUTTER AND CHEESE.

Premiums awarded \$2,190.47

CLASS 60—BUTTER.

Superintendent, A. W. Trow, Glenville.

CREAMERY.

Made from milk or cream of different herds at a creamery, in packages of not less than 20 pounds, minimum points, 91 pro rata.

	Score.	Prem.
E. R. Bacon, Henniker, N. H.....	86	\$0.25
E. V. Campbell, Rowan, Iowa.....	90	1.85
Starbuck Creamery, Starbuck, Minn.....	92½	3.40
Arthur G. West, Amery, Wis.....	92½	3.40
O. H. Galbe, Hanover, N. D.....	93½	3.80
J. S. Thompson, Elizabethtown.....	93	3.90

	Score.	Prem.
T. P. Hafdahl, Kenyon, R. 3.....	93½	4.35
Oscar Olson, Hample, N. D.....	91½	2.35
Magnus Anderson, Lester Prairie.....	92	2.90
J. C. Hanson, Harrison.....	92	2.90
Clyde E. King, Concord, Mich.....	88	1.58
Axel Selvog, Audubon.....	91	1.75
J. G. Koep, Leonard.....	86	.85
F. W. Fisher, Inglefield, Ind.....	93½	3.45
Edwin Odegard, Santiago.....	93½	4.40
Deep River Creamery, Deep River, Iowa.....	90	1.61
I. O. Wiek, Owatonna.....	93	3.90
Christ Swenson, Holton, Mich.....	91	1.30
E. G. Rasmussen, Wausau, R. 2, Wis.....	93½	4.25
John Neitzel, Lakefield.....	95	5.90
H. Sebeck, New Market.....	92	2.90
Louis H. Flagel, Erskine.....	95	5.65
Wm. Kallenbach, Bremer, Iowa.....	89	1.81
H. H. E. Nemitz, Waltham.....	92	2.90
Hugh Wallace, Ft. Atkinson, Wis.....	92½	3.33
F. D. Durant, Oak Center, Wis.....	94½	4.75
J. T. Hanna, Lone Rock, Iowa.....	93½	4.25
E. H. Larson, Belgrade, R. 1.....	94	4.90
R. P. Christensen, St. Croix Falls, Wis.....	91½	2.35
Wm. Boetcher, Montevideo.....	93½	4.40
John Harms, Betcher	94	4.90
A. W. Wilander, Beresford, S. D., R. 1.....	91½	2.15
Erhard Sindblad, North Branch.....	95	5.90
B. G. Bursch, St. Croix Falls, Wis.....	92½	3.40
R. E. Beilke, Hutchinson.....	93	3.90
D. Rasmussen, Rosendale.....	94½	5.22
T. D. Smith, Walcott, N. D.....	90	1.62
Geo. W. Houghton, Fisher.....	94½	5.99
C. A. Sornson, Fairfield.....	91	1.75
B. A. Finch, Silver Creek.....	92½	3.50
John M. Christensen, Spicer.....	91½	2.40
Siblon Olson, New York Mills.....	92½	2.87
Otto Hanson, Gibbon.....	93	3.90
J. J. Farrell, Carver.....	92	2.90
C. A. Finch, Salem, Mich.....	94	4.20
A. M. Babcock, Webster, Wis.....	90	1.90
Fred. Larson, Grantsburg, Wis., R. 1.....	93	3.90
A. L. Bull, Sauk Center.....	88½	1.85
John E. Lindberg, Stark, R. 1.....	92	2.90
Jas. T. Rivard, Centerville.....	94	4.90
Jule Chandoir, Green Bay, Wis., R. 9.....	94	6.94
W. C. Larson, Havana.....	93½	4.40
R. S. Bergsather, Northwood, Iowa.....	94	4.90
Richard L. Lutz, Wells.....	96	6.90
N. A. Tonding, Lansing.....	94	4.90
Herman Christensen, Delavan.....	92	2.90
Henry Hanlon, Milan.....	90	1.90
Peter Kvale, Clover.....	91½	2.40
G. C. Petter, Owatonna.....	94	4.90
Aug. G. Dunker, Claremont.....	94	5.67
O. W. Shaker, Albertville, Wis.....	89	1.90
H. E. Thier, Easton.....	93½	4.40
Louis G. Graunke, Claremont.....	94½	5.40
A. L. Remington, Ruthven, Iowa.....	94	7.05
Alpha Creamery Association, Alpha.....	92	5.15
O. F. Peehl, Vasa.....	93	3.90
Barie Mills Creamery Co., West Salem, Wis.....	92½	3.40

	Score.	Prem.
Olaf Ryboth, Bratsberg	91½	2.35
F. Jacobsen, Cannon Falls.....	93	6.05
J. G. Wilson, Withrow.....	94	4.90
O. H. Gronseth, Waterville.....	94½	5.35
S. C. Petersen, Annandale.....	94	4.90
C. A. Swensen, Otisville.....	93	3.90
Earl E. Mittlestad, Ryan, Iowa.....	93	3.75
Thomas Wallace, Morristown	95	5.90
C. E. Brant, Fairbank, Iowa.....	93½	4.32
E. B. Olds, Deerfield, Iowa.....	94	4.75
Thos. H. Eustice, Janesville.....	94	4.60
Oscar Hartz, New Richland.....	94½	5.40
S. B. Cook, Bloomer, Wis.....	95	5.90
Geo. A. Whaley, Seneca, Wis.....	90	1.90
Frank Ruland, Oakfield, Wis.....	93½	4.40
W. A. Thayer, Langdon, Iowa.....	93	3.65
C. Jensen, Le Sueur.....	88½	1.90
C. O. Klingheil, New Richland.....	92	2.90
James W. Johnson, box 85, Maynard.....	91	1.90
A. H. Jorgenson, Waverly.....	93½	4.40
W. Lund, Forest City.....	93½	4.40
T. E. Ekstrand, Foley.....	90	1.90
J. H. Cockrell, Hewitt.....	93	3.80
Sam B. Edmund, Litchfield.....	95	5.90
B. B. Scripture, Isanti.....	94½	5.40
Aug. J. Johnson, Cokato.....	94	5.25
Willie Johnson, Atwater.....	96	6.90
A. G. Schandel, St. Clair.....	97¼	8.40
Archie T. Parsons, Traverse.....	95	6.80
Oro Bell, Bloomer, Wis.....	93	3.65
Neal C. Sorenson, Butterfield.....	94½	5.34
N. E. Andersen, St. Peter.....	94	4.90
A. Clark, Reedsburg, Wis., R. 1.....	92	2.80
R. Wiese, Halfa, Iowa.....	89	1.60
W. H. Chapman, Woodville, Wis.....	86	1.90
Marten M. Sorenson, Madelia.....	92½	3.40
Fred P. Waller, Mankato.....	95	5.90
L. P. Hansen, Butterfield.....	89	1.90
E. B. Melendy, Sheb Falls, Wis.....	93	3.60
A. G. Dahlman, North Branch.....	93	3.90
Fred G. Smith, Sheldon, N. D.....	88½	1.72
F. A. Seitz, Greenwood, Wis.....	93	3.87
D. W. Mohler, Elsworth, Iowa.....	89	1.70
Albert A. Barberree, Elgin.....	92	2.87
W. F. Hammel, Vorhies, Iowa.....	92	2.75
Joseph Brevey, Wabasso.....	95	5.90
N. R. Lund, Plainview.....	92½	3.40
Nels Ahness, Sleepy Eye.....	93	3.95
Knute Possehl, Stockton.....	93½	4.40
J. W. Koepsell, Lewiston.....	94½	5.40
J. H. Wortenberg, Claremont.....	90	1.90
Milton Bertholf, St. Charles.....	94	4.75
M. C. Netland, Hawley.....	93	3.65
Wm. C. Michaelis, Steele, N. D.....	93½	5.52
Adem Nelson, Carver, R. 1.....	87	1.95
C. E. Smake, Stockton.....	93	3.90
J. A. Petersen, Chisago City.....	94	4.90
F. A. Peterson, Lindstrom, box 121.....	95	5.40
Louis Nielson, Camp Point, Ill.....	92	2.02
Wm. Dubendorf, Coopersville, Mich.....	90½	1.00
Gustave Kruempel, La Moure, N. D.....	92	2.90

	Score.	Prem.
Emil O. Blomquist, Taylors Falls.....	93	3.90
H. O. Tomervig, Flaming.....	94	4.90
J. F. Waleskey, Owatonna, R. 3.....	93	6.15
A. H. Schneider, Lake Elmo.....	94	4.90
Ole S. Johnson, Spring Valley.....	88	1.90
Frank O. Hearn, Boscobel, Wis.....	90	3.98
Thos. Vanderveld, Big Stone City, S. D.....	91	1.87
O. C. Jacobson, Newark, S. D.....	89	1.77
E. A. Paulson, Webster, S. D.....	93	3.90
Robert Wagner, Randalia, Iowa.....	92	2.45
G. H. Nielson, East Troy, Wis.....	94½	5.75
Fred M. Rohe, Osseo, R. 5.....	93½	4.40
S. B. Nelson, Starkweather, N. D.....	91	1.35
Aug. Zandt, New Germany.....	94	4.60
H. L. Flagel, McIntosh.....	94½	5.22
Geo. L. Austin, St. Hilaire.....	92	2.50
N. T. Hugger, Brandon.....	91½	2.20
J. M. Clausen, Mayer.....	93½	4.40
E. O. Quenvold, Hutchinson.....	94½	5.40
F. S. Whirry, Perley.....	92	2.40
Harry Sorensen, Eldred.....	92	1.95
A. L. Gunderson, Beltrami.....	93½	4.30
Geo. W. Myers, Center Chain.....	94	4.90
G. W. Schopbach, Dowagiac, Mich.....	91½	1.92
Louis Andersen, Courtland.....	94½	5.40
W. A. Sautro, Jordan	96	6.90
W. F. Stoltz, Pratt.....	92	2.90
L. C. Jensen, Owatonna.....	93	3.90
A. T. Radke, Hamberg.....	93½	4.40
G. F. Locher, Arlington.....	94	4.90
Herman Panning, Hamberg.....	95	5.90
Christ Hanson, Hanska.....	94½	5.40
Thor. Moe, Winthrop.....	95	6.05
L. E. Fox, Delhi.....	92	11.69
Thor. Moe, Winthrop	94	4.05
John O. Lakke, Hanska.....	94	5.07
Christ Hanson, Hanska.....	94½	4.08
L. L. Harrer, Ontario City, N. Y.....	90%	1.44
G. H. Schendel, Rapidan.....	95½	6.40
A. C. Nelson, Hayward.....	94	4.90
Peter Jensen, Mapleton.....	91	2.25
G. H. Schendel, Rapidan.....	95	3.90
A. Sorrenson, Webster.....	92	2.90
N. M. Jensen, Rock Creek.....	89	1.90
J. L. Wahlstrom, Rush Point.....	95	5.90
S. P. Greeley, Alden.....	93½	4.40
Walter Peterson, Fairbank, Iowa.....	92	2.82
J. B. Feldman, Dyersville, Iowa.....	92	2.81
E. E. Evans, Kanawha, Iowa.....	90	1.38
M. J. Donovan, Brand, Iowa.....	94	4.45
G. Stuessi, Manchester, Iowa.....	93	3.45
F. W. Stephenson, Lamont, Iowa.....	94	4.65
O. E. Weber, Rockford.....	95	5.90
Geo. G. Kolthoff, New Hampton, Iowa.....	92½	4.32
G. E. Lindall, Long Siding.....	93½	4.40
Percy Baxter, Anoka, R. 2.....	93½	5.52
C. Johnson, Howard Lake.....	94½	5.40
Herman Ludage, Waverly, Iowa.....	96½	7.25
Senius Nielson, Welch.....	94	4.90
M. Magnuson, Spring Grove.....	91½	2.40
J. S. Peterson, Meridian, Wis.....	94	4.90

	Score.	Prem.
N. O. Dahlen, Northwood, Iowa.....	94	4.90
J. J. Ross, Clarksville, Iowa.....	94½	5.35
A. W. Snyder, Dickens, Iowa.....	93½	4.40
Fred Peterson, Oakland	96	6.90
S. L. Bennett, Clinton Falls.....	93½	4.40
Henry Sprenger, Conger.....	95	6.25
N. C. Silverling, Glenville.....	96	6.90
E. J. Woodfill, New Richland.....	92	2.90
B. S. Nelson, Swea, Iowa.....	95½	6.40
F. W. Steinke, Owatonna.....	95	5.85
H. H. Jensen, Clark Grove.....	96½	7.40
L. B. Anderson, Albert Lea.....	93	3.90
James Rasmuson, Lerdahl.....	97½	8.40
A. O. Studheim, Albert Lea.....	95	5.90
P. H. Olson, New Salem, N. D.....	95½	5.85
E. J. Cohn, Pine City.....	95	5.90
O. A. Holt, Taylors Falls.....	94	4.90
Alvin P. Strand, Forest Lake.....	94½	5.40
Wm. Moberry, Wadena.....	94	4.90
Erick A. Walstrom, Rush City, R. 2.....	95	5.90
O. P. Jenson, Blooming Prairie.....	94	4.90
P. J. Kahlet, Wauconia, Iowa.....	95	5.25
Oscar Hallquist, Faribault.....	93½	4.40
Albert Christensen, Wilmot, S. D.....	91	10.50
G. A. Norton, Oakland.....	92	2.90
O. O. Vaughn, Sumter.....	91½	2.40
A. P. Ryger, Milbank, S. D.....	93	3.90
O. T. Sunde, Renville.....	93	3.90
A. H. Bentz, Delhi, Iowa.....	95	6.25
P. Christensen, Olivia.....	94½	5.30
Albert Tieiman, Lyle.....	93½	4.40
W. J. Althouse, Good Thunder.....	93	3.90
C. F. Wendt, Welcome.....	94	4.90
A. P. Tuttle, Owatonna.....	95	5.90
Sorren Peterson, Bixby.....	94	4.70
Wm. Walbrock, Lake Lillian.....	94	4.90
N. P. Hanson, Good Thunder.....	94	4.90
J. A. Emerson, Le Sueur Center.....	95	5.90
Geo. A. Holms, Biscay.....	97½	8.40
Theo. V. Scott, Thielman.....	91	1.90
L. P. Holgerson, Troy Center, Wis.....	96	6.69
And. Harho, Erwin, S. D.....	93	3.69
H. Henrickson, Echo.....	88	1.90
G. P. Palmer, Troy, Wis.....	93½	4.19
E. A. Raddock, Elkhorn, Wis.....	92½	3.40
P. Christensen, Olivia.....	93	3.90
O. J. Hamm, Freeborn.....	93	3.95
M. J. Mansager, Steamboat Rock, Iowa.....	96	6.45
P. A. Millar, Hartland.....	94	4.95
C. P. Hulegaard, Hartland.....	93	3.95
F. O. Scott, Augusta.....	92½	3.40
Aug. Frisk, Otisco.....	94	4.95
A. D. Fisher, New Richland.....	94½	5.40
J. F. Shafer, Newell, Iowa.....	92	5.10
Geo. Nelson, Fairfax.....	93½	4.40
Christ Drivdahl, New Ulm, R. 3.....	93	3.70
T. R. Gwinn, Fairfax.....	94	4.90
Wm. Larson, Searls.....	92½	3.30
T. L. Ten Eyck, Lydia.....	92½	3.45
J. W. Reynolds, Eagle Lake.....	94	4.90
W. J. Norman, Waseca.....	92½	3.40
A. E. Banta, Wheatland, Iowa.....	93	3.25

	Score.	Prem.
A. Kingberg, Fredsville, Iowa.....	91	1.65
C. W. Sly, Lake Crystal.....	94	4.90
L. C. Sweet, Eagle Lake.....	95	5.90
Soren Kristensen, Scarville, Iowa.....	94½	4.85
J. P. Jensen, Blue Earth.....	93	3.89
H. C. Hansen, Smith's Mills.....	94	4.88
Geo. E. Jensen, Parkersberg, Iowa.....	90½	1.79
J. C. Frost, St. James.....	92	2.90
H. C. Hansen, Smith's Mills.....	91	1.87
C. L. Hall, Womenoc, Wis.....	90	10.85
G. A. Palmer, Aplington, Iowa.....	91	1.75
Otto C. Kuehn, Clements.....	90	10.50
John E. Boettcher, Janesville, Wis.....	92	2.71
D. D. Dorenson, Frost.....	91½	2.36
Geo. M. Drake, Comfrey.....	93	3.85
R. P. Colwell, Mitchell, S. D.....	95	5.55
J. J. Book, Morgan.....	94½	5.40
C. J. Myers, New Audubon.....	93	3.90
R. W. Franklin, Lake Crystal.....	93	3.90
G. W. Wheeler, Rushmore.....	90	1.90
J. H. Curtes, Lewiston.....	94	4.90
H. N. Johnson, Comfrey.....	94	4.90
F. H. Harnes, Reedsburg, Wis.....	93½	4.35
G. W. Smith, Manannah.....	94	4.45
L. F. Fressman, Delano.....	92½	3.15
John W. Engel, Deerfield.....	92½	3.35
Christian Jensen, Darfur.....	90½	1.45
A. T. Sunde, Lamberton.....	92	11.65
G. R. Fifield, Le Sueur.....	92½	3.90
M. Anderson, Audubon, Iowa, R. 4.....	87	1.35
Harry Moats, Mondena, Wis.....	93	3.85
Oscar Thor, Clarissa.....	93	3.90
Samuel Grimm, Chetek, Wis.....	90	1.90
Ferdinand Grimm, Chetek, Wis., R. 3.....	92	2.90
M. Sorensen, Springfield.....	92½	3.40
Alfred Zoerb, Long Lake.....	91½	2.40
James Sorensen, Maple Plain.....	94	1.90
S. G. Gustafson, Watertown.....	94	4.90
H. P. Larson, Eagle Bend.....	94	4.90
A. T. Matson, Darwin.....	93½	4.40
C. M. Davidson, Climax.....	94	3.55
A. H. Wester, Albany.....	91	1.90
M. P. Mortenson, Cokato.....	96	6.90
Lars W. Leffler, Hendrum.....	94	4.90
M. P. Mortenson, Cokato.....	95½	3.90
F. O. Johnson, Irving.....	94	4.85
Peter W. Baltes, Melrose.....	94	4.90
Oscar Lundquist, Svea.....	93½	4.40
Anton H. Nelson, Litchfield.....	94½	5.40
L. J. Levenick, Darwin.....	94½	5.40
Albert H. Halls, Garretson, S. D.....	89	1.85
Louis Cuveson, Pennock.....	91½	2.35
P. E. Christensen, Garfield.....	93½	4.33
Erick Peterson, Long Prairie.....	94	4.85
C. M. Davidson, Climax.....	95	3.55
Fred Fenden, Ronneby.....	93	3.90
John Hanes, Clotko.....	93	3.85
F. D. Daniels, Fairbanks, Iowa.....	93½	4.15
Wm. Driver, Farada.....	92½	3.35
C. A. Rasmussen, Austin.....	95	5.90
W. J. Vrelin, Kimball.....	94½	5.40
G. E. Eckstrand, Maple Lake.....	92½	3.40
E. O. Olsen, Brooten.....	93½	6.65

	Score.	Prem.
H. A. Hansen, Waseca.....	94	4.65
Albert Swanson, Deronda, Wis.....	94½	5.40
C. Johnson, Fosston.....	95	5.75
Fred. Hansen, Westbury.....	94½	5.05
M. Jensen, Loretto.....	91½	2.40
Oronoco Creamery Co., Oronoco.....	93½	4.23
G. Severson, Hayfield.....	89	1.75
W. H. Kieley, Grove Lake.....	94	4.85
Fred. Miller, Sedan.....	91½	2.25
H. H. Lunou, Skyberg.....	93½	4.35
John F. Kieitz, Watkins.....	94½	5.35
A. J. Herman, Maple Leaf, Iowa.....	91½	2.40
E. W. Steinkans, Elysian.....	94	4.80
Cecil L. Mills, Sumner, Iowa.....	93½	4.35
L. J. Grellong, Kimball.....	96	6.90
U. T. Dahlman, Clayton.....	92½	3.21
P. Nielsen, Winger.....	95	5.35
J. G. Wilson, Withrow.....	95	5.90
Lauritz Olsen, West De Pere, Wis.....	93½	4.19
Wm. Weith, Gotham, Wis.....	90	1.87
P. Sorensen, Twin Lake	96	6.54
M. Sondergaard, Hutchinson.....	98	8.90
Henry Erickson, Hutchinson.....	96¾	7.90
Sam Olsen, Hector	97	7.90
O. O. Holm, Stewart.....	98½	7.40
J. P. Maschke, Stewart.....	97½	8.40
A. Olson, Winsted.....	97¾	8.90
Ole Stomsvik, Badger.....	91	2.25
F. J. Reimers, Stewart.....	95	5.90
D. P. White, Ortonville.....	94	4.90
Calvin Mooers, Ada.....	96½	7.28
L. L. Wakefield, St. Cloud.....	93	3.90
Thos. E. Sadler, Hazelton, Iowa.....	95	5.95
H. R. Duell, Sandwich, Ill.....	94½	5.19
Chas. W. Lorenz, Hebron, N. D.....	92½	3.75
A. F. Guelzow, Fond du Lac, Wis.....	96	6.73
N. J. Hansen, Rosebud, N. D.....	92½	2.85
H. E. Forester, Fredericksburg, Iowa.....	94½	5.00
A. N. Yates, Fon Du Lac, Wis.....	93	3.90
C. A. Scott, Plainview.....	93½	4.40
W. C. Thompson, La Selle.....	92½	3.40
John Grasser, West Brook.....	96½	7.37
John Grasser, West Brook.....	92½	3.87
And. Larson, Milaca.....	89½	1.90
G. E. Lindal, Long Siding.....	93	3.95
O. K. Stowe, Glendorado.....	95	5.90
Geo. Byers, Vermillion.....	94½	5.40
Ole H. Steffand, Radium	89	1.85
G. R. Fifield, Le Sueur.....	93	4.00
Gustave Block, Hadley.....	92	3.00
W. I. Noyes, Rochester.....	93½	4.19
N. C. Sorensen, Kandiyohi.....	94	4.90
F. F. Foss, Dassel.....	95½	6.40
L. C. Shepard, Urbana, Ohio.....	90	2.06
Mathias Dascher, Hutchinson	95	5.90
C. F. Wendt, Welcome.....	94	3.90
P. J. Olson, Dassel, R. 1.....	92½	3.40
C. H. Jensen, Bernadotte.....	96	6.90
John E. Nelson, Godahl.....	89½	10.50
Alex Johnson, New Ulm, R. 6.....	96	66.90
H. C. Anderson, Otisca.....	95½	6.35
Oscar Longbecker, Forman, N. D.....	89	1.63
N. N. Larson, Thief River Falls.....	91½	2.15
C. W. Sly, Lake Crystal.....	94	4.90

	Score.	Prem.
Ernest Schnaubeck, Westbrook.....	92½	3.89
Sig. Klemesrud, Osage, Iowa, R. 2.....	89	1.90
S. S. Rector, Truman.....	92	12.25
J. J. Jensen, St. Peter.....	94	4.70
Fred. Janes, Charles City, Iowa.....	88	2.25
Edwin Hed, Nicollet.....	96½	7.15
Henry Lundahl, Windom.....	95	5.85
C. W. Gillman, Reeve, Wis.....	93	3.90
A. J. Doleschpal, Bancroft, Iowa.....	94	4.90
Wm. Lauritzen, Plummer.....	95	5.40
H. J. Rosenau, Meriden!.....	96½	7.40
A. J. Claphaw, Truman.....	93	3.90
Leonard Hanske, Hulstad.....	89	1.55
W. J. Kurth, Buffalo Lake.....	92	2.90
P. A. McDougal, Lancaster.....	88	1.90
S. P. Sorensen, Carlos, R. 1.....	94	4.79
J. Weis, Fredheim.....	92½	3.40
H. E. Meyer, Waters.....	94	4.90
S. Hanson, Norwood	91½	2.50
F. T. Johnson, Lake Elizabeth.....	92½	3.40
Carl Lund, Oakfield, Wis., R. 28.....	90	10.87
I. G. Arthur, Cascade, Mont.....	92	2.35
H. J. Rosenau, Meriden.....	94½	3.90
T. T. Becht, Knapp.....	95	5.90
John Grandy, Nicollet, R. 2.....	93	3.70
James Sorenson, Maple Plain.....	97 ¾	8.90
A. Hanson, Buffalo Lake.....	96	6.90
John Solberg, Easton.....	95	4.03
John Solberg, Easton.....	97½	8.53
L. H. Rector, Truman.....	89	10.85
Aug. Wehking, Buffalo.....	95½	6.40
Alex. Johnson, New Ulm, R. 6.....	96½	7.50
Herman Curt, Leipzig, N. D.....	90	4.00
Ludvig Sjostrom, Lafayette.....	90½	1.90
Maney Creek Creamery Co.....	91½	2.29
C. H. Cleveland, Mason City, Iowa.....	94	4.88
J. T. Magrane, Rush, Wis.....	91	1.90
L. P. Westerlund, Bricelyn.....	88	1.40
H. R. Kenney, Gann Valley, S. D.....	88	1.41
Fred. Stuelpnagel, St. Paul.....	92½	6.00
Thos. Carswell, Turtle Lake, Wis.....	94	4.85
Wm. Spooner, Mildore, Wis.....	92½	3.40
F. A. Vierguts, Neillsville, Wis.....	93	3.90

DAIRY.

Made on a farm from a single herd of cows, in tubs, prints or jars of not less than five (5) pounds nor more than twenty (20) pounds, minimum points 85.

	Score.	Prem.
W. J. Kendrick, St. Cloud.....	94	4.25
T. B. Jones, Moorhead.....	93	4.65
Mrs. H. Nicholson, Minnesota.....	93½	4.90
F. Mandell, Faribault.....	92	7.25
Bessie Billing, Audubon.....	92½	4.15
Carl Gaumnitz, St. Cloud.....	95½	5.00
F. V. Briggs, Stillwater.....	90	3.15
J. P. Petlier, Hugo.....	92	3.85
Alberta Winn, Redwood Falls.....	90	4.05
B. T. Hoyt, St. Paul.....	91	3.65
Nels Olson, Little Falls.....	92	4.15
C. E. Logan, Hillsboro, Iowa.....	89½	2.55
W. H. Currie, Vesta.....	91	3.27
C. A. Syverson, Norway Lake.....	94	8.40

CLASS 61—CHEESE.

Factory Cheese, commercial size, pro rata premium, minimum points 85.

	Score.	Prem.
Aug. F. Westphal, Neosha, Wis.....	.....	1.40
John Wyss, Mt. Horeb, Wis.....	.....	10.23
John Hereum, Hugo.....	96	6.20
Christ Martig, West Concord.....	91	5.55
J. T. McCarthy, West Concord.....	97	7.96
Jake Lehnher, West Concord.....	98½	8.45
O. B. Butler, Roberts.....	96	4.15
O. B. Butler, Roberts.....	.....	2.45
L. Strombach, Stanton.....	96	7.67
W. R. Atchinson, Stanton.....	94	6.76
A. W. Ingberg, Cannon Falls.....	94	6.76
E. O. Siggelkow, Cleveland, Wis.....	95	5.84
H. Clements, Red Lake Falls.....	92	5.48
W. Ganschow, Bondur, Wis.....	92½	13.20
W. Ganschow, Bondur, Wis.....	.....	9.75
W. Ganschow, Bondur, Wis.....	.....	98
Fred S. Miller, West Concord.....	.....	4.95
Fred. S. Miller, West Concord.....	.....	17.74
Emil S. Hosig, Mayville.....	90	4.39
W. L. Parkins, Mantorville.....	97½	8.38
Fred. S. Hadler, Chilton, Wis.....	97	6.95
D. Kainlang, Wyler.....	95	6.81
Gentilly Dairy Association, Crookston.....	94½	6.64
Mrs. E. W. Smith, Parker's Prairie.....	.....	6.29
W. Ganschow, Bondur, Wis.....	.....	9.75
J. J. Stocker, Pine Island.....	.....	9.25
J. J. Stocker, Pine Island.....	.....	15.00
J. J. Stocker, Pine Island.....	.....	.71
Wenzel Plass, Boyd, Wis.....	.....	6.96
Calix Robidoux, Lambert.....	95	4.58
A. J. Roycroft, Chippewa Falls, Wis.....	88	5.35
Godfrey Anchrist, Berne.....	99	10.77
Godfrey Anchrist, Berne.....	.....	4.00
Godfrey Anchrist, Berne.....	.....	25.00
O. A. Westerly, Milford, N. Y.....	97	6.18
O. A. Westerly, Milford, N. Y.....	.....	7.25
P. E. Craviston, Soldiers Grove, Wis.....	95	7.03

DIVISION G—FRUITS AND FLOWERS.

Premiums awarded \$1,563.62

Superintendent—J. M. Underwood, Lake City.

Assistant Superintendent—A. W. Latham, 207 Kasota Block, Minneapolis.

CLASS 62—APPLES.

(Open to all.)

	1st Prem.
Lot 1—Sweepstakes collection (\$60 to be divided pro rata)—	
Frank Yahnke, Winona	\$13.37
R. C. Keel, Rochester.....	11.95
J. A. Howard, Hammond.....	11.01
C. C. Hunter, Minneapolis.....	9.48
A. M. Mitchell, Hammond.....	8.68
Maron De Witt, Hammond.....	5.51
Lot 2—Peck of Wealthy apples (\$20 to be divided pro rata)—	
J. A. Howard, Hammond.....	\$2.25
C. E. Older, Luverne.....	1.80
Clarence Wedge, Albert Lea.....	1.80
John Bisbee, Madelia.....	1.79
W. E. Oliver, Worthington.....	1.58
F. I. Harris, La Crescent.....	1.62
Frank J. Butterfield, Long Lake.....	1.62
Wilcox & Co., White Bear Lake.....	1.57
Thos. Redpath, Wayzata.....	1.57
Maron De Witt, Hammond.....	1.47
W. L. Parker, Farmington.....	1.47
P. H. Perry, Excelsior.....	1.46
Lot 3—Collection of 10 varieties of apples (\$30 to be divided pro rata)—	
F. I. Harris, La Crescent.....	\$3.19
Frank Yahnke, Winona.....	3.18
J. A. Howard, Hammond.....	3.18
C. E. Older, Luverne.....	2.87
Clarence Wedge, Albert Lea.....	2.87
P. H. Perry, Excelsior.....	2.55
W. E. McNelly, Caledonia.....	2.55
John Bisbee, Madelia.....	2.55
A. B. Lyman, Excelsior.....	2.39
Nils Anderson, Lake City.....	2.38
Geo. W. Strand, Taylors Falls.....	2.29

CLASS 63—APPLES.

(For Professionals.)

Lot 4—Collection (hybrids and crabs excepted), not to exceed 50 varieties nor less than 30 varieties. To be divided pro rata, \$75.

J. A. Howard, Hammond.....	\$19.10
Clarence Wedge, Albert Lea.....	15.60
W. L. Parker, Farmington.....	17.60
Frank Yahnke, Winona.....	14.60
C. E. Older, Luverne.....	7.80

With an addition of \$10 for the first premium and \$5 for the second premium.

		1st Prem.	2nd Prem.	3rd Prem.
J. A. Howard, Hammond.....	\$10.00			
W. L. Parker, Farmington.....		5.00		
Anisim—				
E. G. Evestred, Sacred Heart.....	1.00			
J. A. Howard, Hammond.....		.75		
F. I. Harris, La Crescent.....			.50	
Anis—				
Clarence Wedge, Albert Lea.....	1.00			
Antonovka—				
A. B. Lyman, Excelsior.....	1.00			
Thomas Redpath, Wayzata.....		.75		
F. I. Harris, La Crescent.....			.50	
Ben Davis—				
Clarence Wedge, Albert Lea.....	1.00			
Frank Yahnke, Winona.....		.75		
P. H. Perry, Excelsior.....			.50	
Brett—				
P. H. Perry, Excelsior.....	1.00			
Clarence Wedge, Albert Lea.....		.75		
W. L. Parker, Farmington.....			.50	
Borovinka—				
Gust Johnson, Excelsior.....	1.00			
W. L. Parker, Farmington.....		.75		
P. H. Perry, Excelsior.....			.50	
Cross—				
W. L. Parker, Farmington.....	1.00			
Clarence Wedge, Albert Lea.....		.75		
Christmas—				
A. B. Lyman, Excelsior.....	1.00			
Clarence Wedge, Albert Lea.....		.75		
Charlamoff—				
W. L. Parker, Farmington.....	1.00			
Gust Johnson, Excelsior.....		.75		
P. H. Perry, Excelsior.....			.50	
Fameuse—				
Clarence Wedge, Albert Lea.....	1.00			
F. I. Harris, La Crescent.....		.75		
W. E. McNelly, Caledonia.....			.50	
Forsberg—				
J. A. Howard, Hammond.....	1.00			
F. I. Harris, La Crescent.....		.75		
Gideon—				
F. I. Harris, La Crescent.....	1.00			
P. H. Perry, Excelsior.....		.75		
W. L. Parker, Farmington.....			.50	
Giant Swaar—				
F. I. Harris, La Crescent.....	1.00			
J. A. Howard, Hammond.....		.75		
Gilbert—				
J. A. Howard, Hammond.....	1.00			
W. E. McNelly, Caledonia.....		.75		
F. I. Harris, La Crescent.....			.50	
Golden Russet—				
Frank Yahnke, Winona.....	1.00			
J. A. Howard, Hammond.....		.75		
Clarence Wedge, Albert Lea.....			.50	

		1st Prem.	2nd Prem.	3rd Prem.
Grundy—				
J. A. Howard, Hammond.....	1.00			
F. I. Harris, La Crescent.....		.75		
Haas—				
W. E. McNelly, Caledonia.....	1.00			
G. A. Anderson, Renville.....		.75		
J. A. Howard, Hammond.....			.50	
Hutchins—				
J. A. Howard, Hammond.....	1.00			
Jewell's Winter—				
Thomas Redpath, Wayzata.....	1.00			
J. A. Howard, Hammond.....		.75		
Lord's L.—				
Frank Yahnke, Winona.....	1.00			
J. A. Howard, Hammond.....		.75		
F. I. Harris, La Crescent.....			.50	
Lowland Raspberry—				
A. B. Lyman, Excelsior.....	1.00			
Longfield—				
F. I. Harris, La Crescent.....	1.00			
Thomas Redpath, Wayzata.....		.75		
F. H. Perry, Excelsior.....			.50	
Malinda—				
Clarence Wedge, Albert Lea.....	-1.00			
W. L. Parker, Farmington.....		.75		
J. A. Howard, Hammond.....			.50	
Newell's—				
W. L. Parker, Farmington.....	1.00			
J. A. Howard, Hammond.....		.75		
Peter—				
Thomas Redpath, Wayzata.....	1.00			
J. A. Howard, Hammond.....		.75		
C. E. Older, Luverne.....			.50	
Peerless—				
W. E. McNelly, Caledonia.....	1.00			
Gust Johnson, Excelsior.....		.75		
J. A. Howard, Hammond.....			.50	
Peach—				
W. L. Parker, Farmington.....	1.00			
Plumb's Cider—				
Frank Yahnke, Winona.....	1.00			
W. L. Parker, Farmington.....		.75		
Rollin's Prolific—				
J. A. Howard, Hammond.....	1.00			
F. I. Harris, La Crescent.....		.75		
Lot 35—Repka Malenka—				
Gust Johnson, Excelsior.....	1.00			
Thomas Redpath, Wayzata.....		.75		
W. L. Parker, Farmington.....			.50	
Lot 36—St. Lawrence—				
Frank Yahnke, Winona.....	1.00			
W. L. Parker, Farmington.....		.75		
J. A. Howard, Hammond.....			.50	
Lot 37—Scott's Winter—				
F. I. Harris, La Crescent.....	1.00			
J. A. Howard, Hammond.....		.75		
W. L. Parker, Farmington.....			.50	

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		1st Prem.	2nd Prem.	3rd Prem.
Lot 37½—Sugar Leaf—				
Frank Yahnke, Winona.....		1.00		
J. A. Howard, Hammond.....			.75	
Lot 38—Tetofsky—				
W. L. Parker, Farmington.....		1.00		
Frank Yahnke, Winona.....			.75	
J. A. Howard, Hammond.....				.50
Lot 39—Utter—				
J. A. Howard, Hammond.....		1.00		
A. B. Lyman, Excelsior.....			.75	
F. I. Harris, La Crescent.....				.50
Lot 40—University—				
Clarence Wedge, Albert Lea.....		1.00		
Frank Yahnke, Winona .....			.75	
P. H. Perry, Excelsior.....				.50
Lot 41—White Pigeon—				
Frank Yahnke, Winona.....		1.00		
J. A. Howard, Hammond.....			.75	
Lot 42—Walbridge—				
Frank Yahnke, Winona.....		1.00		
J. A. Howard, Hammond.....			.75	
G. A. Anderson, Renville.....				.50
Lot 43—Yahnke—				
Frank Yahnke, Winona.....		1.00		
J. A. Howard, Hammond.....			.75	
Lot 44—Yellow Sweet—				
Frank Yahnke, Winona.....		1.00		
Lot 45—Yellow Transparent—				
A. B. Lyman, Excelsior.....		1.00		
P. H. Perry, Excelsior.....			.75	
Frank Yahnke, Winona.....				.50
		1st Prem.	2nd Prem.	3rd Prem.
		4th Prem.	5th Prem.	6th Prem.
		7th Prem.		
Lot 46—Duchess—				
W. E. McNelly, Caledonia	\$2.00			
Frank Yahnke, Winona..		1.75		
P. H. Perry, Excelsior..			1.50	
G. A. Anderson, Renville.				1.25
W. L. Parker, Farmington				1.00
J. W. Beckman, Cokato..				
Fred Mohl, Adrian.....				.75
				.50
Lot 47—Hibernal—				
J. A. Howard, Hammond	2.00			
Clarence Wedge, Albert				
Lea	1.75			
C. E. Older, Luverne....		1.50		
G. A. Anderson, Renville			1.25	
Fred Mohl, Adrian.....				1.00
Gust Johnson, Excelsior.				
A. B. Lyman, Excelsior.				.75
				.50
Lot 48—McMahon—				
J. A. Howard, Hammond	\$2.00			
Thos. Redpath, Wayzata.		1.75		
F. I. Harris, La Crescent			1.50	
Gust Johnson, Excelsior..				1.25
Clarence Wedge, Albert				
Lea			1.00	
Frank Yahnke, Winona..				.75
W. L. Parker, Farming-				
ton .....				.50

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.	6th Prem.	7th Prem.
Lot 51—Northwestern Greening—							
F. I. Harris, La Crescent	\$2.00						
J. A. Howard, Hammond		1.75					
P. H. Perry, Excelsior...			1.50				
Clarence Wedge, Albert							
Lea				1.25			
Frank Yahnke, Winona..					1.00		
W. L. Parker, Farming- ton .....						.75	
							.75
Lot 52—Okabena—							
A. Brackett, Excelsior....	\$2.00						
F. I. Harris, La Crescent		1.75					
P. H. Perry, Excelsior...			1.50				
Clarence Wedge, Albert							
Lea				1.25			
C. E. Older, Luverne....					1.00		
Frank Yahnke, Winona..						.75	
W. L. Parker, Farming- ton .....							.50
Lot 53—Patten's Greening—							
J. A. Howard, Hammond	\$2.00						
F. I. Harris, La Crescent		1.75					
Fred. Mohl, Adrian.....			1.50				
P. H. Perry, Excelsior...				1.25			
Frank Yahnke, Winona..					1.00		
Frank Yahnke, Winona..						.75	
A. Brackett, Excelsior.							.50
Lot 54—Wealthy—							
F. I. Harris, La Crescent.	\$2.00						
J. A. Howard, Hammond		1.75					
G. A. Anderson, Renville.			1.50				
W. L. Parker, Farming- ton				1.25			
W. E. McNelly, Caledonia					1.00		
E. G. Evestredt, Sacred Heart .....						.75	
P. H. Perry, Excelsior...							.50
Lot 54½—Wolf River—							
J. A. Howard, Hammond	\$2.00						
Frank Yahnke, Winona..		1.75					
G. A. Anderson, Renville			1.50				
C. E. Older, Luverne...				1.25			
Clarence Wedge, Albert							
Lea					1.00		
F. I. Harris, La Crescent						.75	
P. H. Perry, Excelsior...							.50

CLASS 64—APPLES.

(For Amateurs.)

	1st Prem.	2nd Prem.	3rd Prem.
Lot 55—Collections (\$75 to be divided pro rata)—			
A. M. Mitchell, Hammond.....		\$16.65	
Maron De Witt, Hammond.....		13.30	
John R. Cummins, Eden Prairie.....		11.70	
R. C. Keel, Rochester.....		10.90	
John Bisbee, Madelia.....		10.05	
Conrads & Sons, Luverne.....		6.60	
Anton Wilwerding, Freeport.....		5.80	

		1st Prem.	2nd Prem.	3rd Prem.
With an addition of \$10 for the 1st premium—				
A. M. Mitchell, Hammond.....	10.00			
and \$5 for the 2nd premium				
Maron De Witt, Hammond.....		5.00		
Lot 56—Anis—				
Frank J. Butterfield, Long Lake.....	1.00			
R. C. Keel, Rochester.....		.75		
A. M. Mitchell, Hammond.....			.50	
Lot 57—Anisim—				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
H. W. Shuman, Excelsior.....			.50	
Lot 58—Antonovka—				
Frank J. Butterfield, Long Lake.....	1.00			
Lot 59—Ben Davis—				
W. J. Tingley, Winthrop.....	1.00			
B. J. Perry, Excelsior.....		.75		
Hamline V. Poor, Bird Island.....			.50	
Lot 60—Brett—				
W. J. Tingley, Winthrop.....	1.00			
R. C. Keel, Rochester.....		.75		
Joseph Wood, Windom .....			.50	
Lot 61—Borovinka—				
S. R. Spates, Wayzata.....	1.00			
Frank J. Butterfield, Long Lake.....		.75		
B. J. Perry, Excelsior.....			.50	
Lot 62—Cross—				
F. F. Farrar, White Bear Lake.....	1.00			
Joseph Wood, Windom.....		.75		
Lot 64—Charlamoff—				
H. W. Shuman, Excelsior.....	1.00			
John R. Cummins, Eden Prairie.....		.75		
Maron De Witt, Hammond.....			.50	
Lot 65—Fameuse—				
Nils Anderson, Lake City.....	1.00			
Forsberg—				
H. W. Shuman, Excelsior.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Giant Swaar—				
R. C. Keel, Rochester.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Gilbert—				
F. F. Farrar, White Bear Lake.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Golden Russet—				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
R. C. Keel, Rochester.....			.50	
Grundy—				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
Haas—				
Maron De Witt, Hammond.....	1.00			
A. M. Mitchell, Hammond.....		.75		

		1st Prem.	2nd Prem.	3rd Prem.
Hutchins—				
H. W. Shuman, Excelsior.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Iowa Beauty—				
Isabella Barton, Excelsior.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Jewell's Winter—				
Nils Anderson, Lake City.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Judson—				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
Lord's L.—				
H. C. Cornwell, Minnesota City.....	1.00			
Lowland Raspberry—				
R. C. Keel, Rochester.....	1.00			
Longfield—				
Maron De Witt, Hammond.....	1.00			
H. W. Shuman, Excelsior.....		.75		
A. M. Mitchell, Hammond.....			.50	
Malinda—				
R. C. Keel, Rochester.....	1.00			
John Bisbee, Madelia.....		.75		
A. M. Mitchell, Hammond.....			.50	
Newell's—				
John Bisbee, Madelia.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Peter—				
S. R. Spates, Wayzata.....	1.00			
H. W. Shuman, Excelsior.....		.75		
A. M. Mitchell, Hammond.....			.50	
Peach—				
R. C. Keel, Rochester.....	1.00			
Peerless—				
H. W. Suman, Excelsior.....	1.00			
S. R. Spates, Wayzata.....		.75		
A. M. Mitchell, Hammond.....			.50	
Plumb's Cider—				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond .....		.75		
Rollin's Prolific—				
Maron De Witt, Hammond.....	1.00			
R. C. Keel, Rochester.....		.75		
A. M. Mitchell, Hammond.....			.50	
Repka Malenka--				
Scott's Winter—				
Nils Anderson, Lake City.....	1.00			
Isabella Barton, Excelsior.....		.75		
Maron De Witt, Hammond.....			.50	
St. Lawrence--				
A. M. Mitchell, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
Sugar Loaf—				
H. C. Cornwell, Minnesota City.....	1.00			

	1st Prem.	2nd Prem.	3rd Prem.
Tetofsky—			
A. M. Mitchell, Hammond.....	1.00		
Nils Anderson, Lake City .....		.75	
Maron De Witt, Hammond.....			.50
Utter—			
Nil's Anderson, Lake City.....	1.00		
Marou De Witt, Hammond.....		.75	
A. M. Mitchell, Hammond.....			.50
University—			
H. W. Shuman, Excelsior.....	1.00		
W. J. Tingley, Winthrop.....		.75	
Anton Wilwerding, Freeport.....			.50
White Pigeon—			
A. M. Mitchell, Hammond.....	1.00		
Maron De Witt, Hammond.....		.75	
R. C. Keel, Rochester.....			.50
Walbridge—			
Nils Anderson, Lake City.....	1.00		
Maron De Witt, Hammond.....		.75	
A. M. Mitchell, Hammond.....			.50
Yahnke—			
W. L. Parker, Farmington.....	1.00		
Yellow Sweet—			
W. J. Tingley, Withrow.....	1.00		
Yellow Transparent—			
E. A. Farmer, Minneapolis.....	1.00		
Anton Wilwerding, Freeport.....		.75	
R. C. Keel, Rochester.....			.50
	1st Prem.	2nd Prem.	3rd Prem.
Duchess—	4	5th Prem.	6th Prem.
S. R. Spates, Wayzata... \$2.00			
H. Springer, Minneapolis	1.75		
R. C. Keel, Rochester....		1.50	
Frank J. Butterfield, Long Lake			1.25
John Bisbee, Madelia....			1.00
Maron De Witt, Ham- mond .....			.75
Aug Giesmann, Merriam Park .....			.50
Hibernal—			
A. M. Mitchell, Hammond 2.00			
F. F. Farrar, White Bear Lake	1.75		
Maron De Witt, Ham- mond		1.50	
W. J. Tingley, Withrow..			1.25
Nils Anderson, Lake City			1.00
S. R. Spates, Wayzata...			.75
J. O. Weld, Mound.....			.50
McMahon—			
Maron De Witt, Ham- mond	2.00		
R. C. Keel, Rochester....	1.75		
A. M. Mitchell, Hammond		1.50	

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	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.	6th Prem.	7th Prem.
Northwestern Greening—							
Maron De Witt, Ham- mond	2.00						
A. M. Mitchell, Hammond		1.75					
Nils Anderson, Lake City			1.50				
John Bisbee, Madelia....				1.25			
Anton Wilwerding, Freeport					1.00		
R. C. Keel, Rochester...						.75	
Okabena—							
A. M. Mitchell, Hammond	2.00						
H. W. Shuman, Excelsior		1.75					
Nils Anderson, Lake City			1.50				
J. O. Weld, Mound.....				1.25			
Maron De Witt, Ham- mond					1.00		
Wilcox & Co., White						.75	
Bear Lake .. ....							.50
S. R. Spates, Wayzata...							
Patten's Greening—							
Maron De Witt, Ham- mond	2.00						
H. W. Shuman, Excelsior		1.75					
S. R. Spates, Wayzata...			1.50				
A. M. Mitchell, Hammond				1.25			
Alfred Albee, Caledonia..					1.00		
John Gantzer, St. Paul...						.75	
John Bisbee, Madelia....							.50
Wealthy—							
Maron De Witt, Ham- mond	2.00						
H. W. Shuman, Excelsior		1.75					
S. R. Spates, Wayzata...			1.50				
A. M. Mitchell, Hammond				1.25			
R. C. Keel, Rochester....					1.00		
Rudolph G. Fisher, Merriam Park .....						.75	
Wolf River—							
R. C. Keel, Rochester....	2.00						
Maron De Witt, Ham- mond		1.75					
A. M. Mitchell, Hammond			1.50				
John Bisbee, Madelia....				1.25			
Anton Wilwerding, Freeport					1.00		
John Gantzer, St. Paul...						.75	

CLASS 65—CRABS AND HYBRIDS.

(Open to all.)

Collection not to exceed ten nor less than six varieties (\$30 to be divided pro rata).

	1st Prem.	2nd Prem.	3rd Prem.
Maron De Witt, Hammond.....	\$3.08		
W. L. Parker, Farmington.....	2.98		
P. H. Perry, Excelsior.....	2.94		
Anton Wilwerding, Freeport.....	2.80		
S. R. Spates, Wayzata.....	2.80		
Frank Yahnke, Winona.....	2.76		
G. A. Anderson, Renville.....	2.65		
C. E. Older, Luverne.....	2.49		
R. C. Keel, Rochester.....	2.45		
J. A. Howard, Hammond.....	2.35		
Hamline V. Poor, Bird Island.....	2.21		
 Dartt—			
H. W. Shuman, Excelsior.....	1.00		
J. A. Howard, Hammond.....		.75	
A. M. Mitchell, Hammond.....			.50
 Early Strawberry—			
W. E. McNelly, Caledonia.....	1.00		
G. A. Anderson, Renville.....		.75	
W. L. Parker, Farmington.....			.50
 Florence—			
Frank Yahnke, Winona.....	1.00		
W. L. Parker, Farmington.....		.75	
J. W. Beckman, Cokato.....			.50
 Gideon's No. 6—			
Frank Yahnke, Winona.....	1.00		
R. C. Keel, Rochester.....		.75	
W. J. Tingley, Withrow.....			.50
 General Grant—			
G. A. Anderson, Renville.....	1.00		
R. C. Keel, Rochester.....		.75	
J. A. Howard, Hammond.....			.50
 Hyslop—			
Rudolph G. Fischer, Merriam Park.....	1.00		
J. A. Howard, Hammond.....		.75	
R. C. Keel, Rochester.....			.50
 Lyman's Prolific—			
H. W. Shuman, Excelsior.....	1.00		
S. R. Spates, Wayzata.....		.75	
J. A. Howard, Hammond.....			.50
 Martha—			
J. A. Howard, Hammond.....	1.00		
W. L. Parker, Farmington.....		.75	
R. C. Keel, Rochester.....			.50
 Minnesota—			
G. A. Anderson, Renville.....	1.00		
Clarence Wedge, Albert Lea.....		.75	
W. L. Parker, Farmington.....			.50
 Montreal Beauty—			
J. A. Howard, Hammond.....	1.00		
Maron De Witt, Hammond.....		.75	
A. M. Mitchell, Hammond.....			.50

		1st Prem.	2nd Prem.	3rd Prem.
Meader'a Winter—				
J. A. Howard, Hammond.....	1.00			
Maron De Witt, Hammond.....		.75		
W. L. Parker, Farmington.....			.50	
Orange—				
W. L. Parker, Farmington.....	1.00			
J. A. Howard, Hammond.....		.75		
A. M. Mitchell, Hammond.....			.50	
Pickett's—				
J. A. Howard, Hammond.....	1.00			
A. M. Mitchell, Hammond.....		.75		
Maron De Witt, Hammond.....			.50	
Pride of Minnesota—				
Thomas Redpath, Wayzata.....	1.00			
Rudolph G. Fischer, Merriam Park.....		.75		
S. R. Spates, Wayzata.....			.50	
Shields—				
J. A. Howard, Hammond.....	1.00			
Sweet Russet—				
F. I. Harris, La Crescent.....	1.00			
R. C. Keel, Rochester.....		.75		
Frank Yahnke, Winona.....			.50	
Tonkas—				
S. R. Spates, Wayzata.....	1.00			
F. I. Harris, La Crescent.....		.75		
Transcendent—				
H. Springer, Minneapolis.....	1.00			
Thomas Redpath, Wayzata.....		.75		
W. E. McNelly, Caledonia.....			.50	
Virginia—				
J. A. Howard, Hammond.....	1.00			
Frank J. Butterfield, Long Lake.....		.75		
S. R. Spates, Wayzata.....			.50	
Whitney—				
F. I. Harris, La Crescent.....	1.00			
C. E. Older, Luverne.....		.75		
S. R. Spates, Wayzata.....			.50	

CLASS 66—SEEDLING APPLES.

(Open to all.)

Collection, excluding crabs (\$50 to be divided pro rata).

T. E. Perkins, Red Wing.....	\$23.00
A. B. Lyman, Excelsior.....	16.00
Frank Yahnke, Winona.....	11.00

Collection of crabs and hybrids (\$15 to be divided pro rata).

Frank Yahnke, Winona.....	15.00
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Summer variety—kept in cold storage—

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
T. E. Perkins, Red Wing.....	\$6.00			
G. A. Anderson, Renville.....		4.00		
Thomas Redpath, Wayzata.....			2.00	
Frank Yahnke, Winona.....				1.00

	Prem. 1st	Prem. 2nd	Prem. 3rd	Prem. 4th
Fall variety; not sweet—never having received a premium at the Minnesota State Fair—				
Thomas Redpath, Wayzata.....	6.00			
A. B. Lyman, Excelsior.....		4.00		
T. E. Perkins, Red Wing.....			2.00	
Clarence Wedge, Albert Lea.....				1.00
Fall variety—not sweet—open to all—				
Clarence Wedge, Albert Lea.....	6.00			
T. E. Perkins, Red Wing.....		4.00		
Thomas Redpath, Wayzata.....			2.00	
A. B. Lyman, Excelsior.....				1.00
Winter variety—not sweet, never having received a premium at the Minnesota State Fair—				
Thomas Redpath, Wayzata.....	10.00			
Frank Yahnke, Winona.....		8.00		
T. E. Perkins, Red Wing.....			4.00	
G. A. Anderson, Renville.....				2.00
Winter variety—not sweet, open to all—				
Nils Anderson, Lake City.....	10.00			
A. B. Lyman, Excelsior.....		8.00		
T. E. Perkins, Red Wing.....			4.00	
A. B. Lyman, Excelsior.....				2.00
Sweet variety, never having received a premium at the Minnesota State Fair, of such excellent quality as to make it worthy of cultivation; either fall or winter—				
Clarence Wedge, Albert Lea.....	6.00			
Frank Yahnke, Winona.....		4.00		
A. B. Lyman, Excelsior.....				2.00

CLASS 67—PLUMS

Sweepstakes collection (\$30 to be divided pro rata)—

De Wain Cook, Jeffers.....	\$5.40
J. A. Howard, Hammond.....	5.27
Joseph Wood, Windom.....	5.27
P. H. Perry, Excelsior.....	5.20
Frank Yahnke, Winona.....	4.50
C. E. Older, Luverne.....	4.36
Collection: Not to exceed 15 named varieties (\$25 to be divided pro rata)—	
Nils Anderson, Lake City.....	2.75
John R. Cummins, Eden Prairie.....	2.41
De Wain Cook, Jeffers.....	2.35
Frank Yahnke, Winona.....	2.34
Joseph Wood, Windom.....	2.34
L. Conrad & Sons, Luverne.....	2.31
P. H. Perry, Excelsior.....	2.21
Gust Johnson, Excelsior.....	2.17
J. A. Howard, Hammond.....	2.14
Geo. W. Strand, Taylors Falls.....	2.05
Hamline V. Poor, Bird Island.....	1.92

1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
	1.00		
		.75	
			.50

Cheney—

F. H. Gibbs, Merriam Park.....	1.00
Joseph Wood, Windom.....	
Anton Wilwerding, Freeport.....	

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
De Soto—				
C. E. Older, Luverne.....	1.00			
Nils Anderson, Lake City.....		.75		
Frank Yahnke, Winona.....			.50	
Forest Garden—				
Gust Johnson, Excelsior.....	1.00			
Geo. W. Strand, Taylors Falls.....		.75		
P. H. Perry, Excelsior.....			.50	
Hawkeye—				
Frank Yahnke, Winona.....	1.00			
Joseph Wood, Windom.....		.75		
J. A. Howard, Hammond.....			.50	
New Ulm—				
J. V. Bailey, Newport.....	1.00			
Joseph Wood, Windom.....		.75		
Hamline V. Poor, Bird Island.....			.50	
Ocheeda—				
Joseph Wood, Windom.....	1.00			
Frank Yahnke, Winona.....		.75		
Odegard—				
Rockford—				
Joseph Wood, Windom.....	1.00			
Gust Johnson, Excelsior.....		.75		
De Wain Cook, Jeffers.....			.50	
Rollingstone—				
P. H. Perry, Excelsior.....	1.00			
Frank Yahnke, Winona.....		.75		
Joseph Wood, Windom.....			.50	
Stoddard—				
Gust Johnson, Excelsior.....	1.00			
W. L. Parker, Farmington.....		.75		
Frank Yahnke, Winona.....			.50	
Surprise—				
Frank Yahnke, Winona.....	1.00			
J. V. Bailey, Newport.....			.50	
S. R. Spates, Wayzata.....		.75		
Weaver—				
Frank Yahnke, Winona.....	1.00			
Joseph Wood, Windom.....		.75		
Wolf Freestone—				
W. L. Parker, Farmington.....	1.00			
August Giesmann, Merriam Park.....		.75		
L. Conrad & Sons, Luverne.....			.50	
Wolf Clingstone—				
P. H. Perry, Excelsior.....	1.00			
De Wain Cook, Jeffers.....		.75		
J. A. Howard, Hammond.....			.50	
Wyant—				
Frank Yahnke, Winona.....	1.00			
J. A. Howard, Hammond.....		.75		
A. M. Mitchell, Hammond.....			.50	

SUNDRIES.

Pears—			
F. I. Harris, La Crescent.....	2.00		
Frank Yahnke, Winona.....		1.00	

SEEDLING PLUMS.

One-half peck seedling plums (\$15 to be divided pro rata)—

De Wain Cook, Jeffers.....	8.70
J. A. Howard, Hammond.....	6.30

Best plate of seedling plums to average not less than one-quarter inches—

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.	5th Prem.
Joseph Wood, Windom.....	\$5.00				
Hamline V. Poor, Bird Island.....		4.00			
De Wain Cook, Jeffers.....			3.00		
L. Conrad & Sons, Luverne.....				2.00	
Frank Yahnke, Winona.....					1.00

CLASS 68—GRAPEs.

Collection (not less than 10 varieties, \$60 to be divided pro rata)—

Gust Johnson, Excelsior.....	\$60.00
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	1st Prem.	2nd Prem.	3rd Prem.
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Agawam (Roger's No. 15)—

Gust Johnson, Excelsior.....	1.50	
Geo. W. Strand, Taylors Falls.....		1.00

Aminia (Roger's No. 39)—

Gust Johnson, Excelsior.....	1.50
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Beta—

E. G. Evestredt, Sacred Heart.....	1.50	
F. F. Farrar, White Bear Lake.....		1.00
Geo. W. Strand, Taylors Falls.....		.50

Brighton—

Gust Johnson, Excelsior.....	1.50	
F. F. Farrar, White Bear Lake.....		1.00
Geo. W. Strand, Taylors Falls.....		.50

Concord—

Gust Johnson, Excelsior.....	1.50	
August Giesmann, Merriam Park.....		1.00
F. F. Farrar, White Bear Lake.....		.50

Cottage—

Gust Johnson, Excelsior.....	1.50
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Campbell's Early—

Gust Johnson, Excelsior.....	1.50	
Geo. W. Strand, Taylors Falls.....		1.00
F. F. Farrar, White Bear Lake.....		.50

Delaware—

Gust Johnson, Excelsior.....	1.50	
Geo. W. Strand, Taylors Falls.....		1.00
De Mitt Clinton Ruff, St. Paul.....		.50

Duchess—

Gust Johnson, Excelsior.....	1.50
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Early Victor—

Gust Johnson, Excelsior.....	1.50
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Eldorado—

Gust Johnson, Excelsior.....	1.50
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Empire State—

Gust Johnson, Excelsior.....	1.50
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Green Mountain—

F. F. Farrar, White Bear Lake.....	1.50
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		1st Prem.	2nd Prem.	3rd Prem.
Herbert (Roger's No. 44)—	Gust Johnson, Excelsior.....	1.50		
	F. F. Farrar, White Bear Lake.....		1.00	
Iona—	Gust Johnson, Excelsior.....	1.50		
Janesville—	F. F. Farrar, White Bear Lake.....	1.50		
Lindley (Roger's No. 9)—	Gust Johnson, Excelsior.....	1.50		
Lady—	Gust Johnson, Excelsior.....	1.50		
Martha—	Gust Johnson, Excelsior.....	1.50		
Massait, (Roger's No. 3)—	Gust Johnson, Excelsior.....	1.50		
Moore's Diamond—	Gust Johnson, Excelsior.....	1.50		
	Geo. W. Strand, Taylors Falls.....		1.00	
Moore's Early—	H. B. Tillotson, Eureka.....	1.50		
	Gust Johnson, Excelsior.....		1.00	
Niagara—	Gust Johnson, Excelsior.....	1.50		
	Geo. W. Strand, Taylors Falls.....		1.00	
Pocklington—	Gust Johnson, Excelsior.....	1.50		
Pokeepsie Red—	Isabella Barton, Excelsior.....	1.50		
	Gust Johnson, Excelsior.....		1.00	
Telegraph—	Gust Johnson, Excelsior.....	1.50		
Wilder (Roger's No. 4)—	Gust Johnson, Excelsior.....	1.50		
	F. F. Farrar, White Bear Lake.....		1.00	
Woodruff Red—	Gust Johnson, Excelsior.....	1.50		
	F. F. Farrar, White Bear Lake.....		1.00	
Worden—	Gust Johnson, Excelsior.....	1.50		
	F. F. Farrar, White Bear Lake.....		1.00	
Wyoming Red—	Gust Johnson, Excelsior.....	1.50		
	Geo. W. Strand, Taylors Falls.....		1.00	

SEEDLING GRAPES.**SINGLE VARIETY.****CLASS 69—FLOWERS.**

(For Professionals.)

PLANTS.	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Collection of foliage and decorative plants—				
Minneapolis Floral Co., Minneapolis.....	\$35.00			
E. Nagel & Son, Minneapolis.....		30.00		
John Vasatka, Minneapolis.....			20.00	
Collection of greenhouse plants—				
Minneapolis Floral Co., Minneapolis.....	20.00			
E. Nagel & Son, Minneapolis.....		15.00		
John Vasatka, Minneapolis.....			10.00	
Collection of five hanging baskets—				
E. Nagel & Son, Minneapolis.....	6.00			
John Vasatka, Minneapolis.....		4.00		
Minneapolis Floral Co., Minneapolis.....			3.00	
Collection of coleus—				
E. Nagel & Son, Minneapolis.....	2.00			
John Vasatka, Minneapolis.....		1.00		
Minneapolis Floral Co., Minneapolis.....			.50	
Group of palms in pot—				
E. Nagel & Son, Minneapolis.....	4.00			
Minneapolis Floral Co., Minneapolis.....		3.00		
John Vasatka, Minneapolis.....			2.00	
Single specimen palm—one in pot—				
John Vasatka, Minneapolis.....	4.00			
Minneapolis Floral Co., Minneapolis.....		3.00		
E. Nagel & Son, Minneapolis.....			2.00	
Single specimen fern—one in pot				
E. Nagel & Son, Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		3.00		
Minneapolis Floral Co., Minneapolis.....			2.00	
Collection of geraniums in bloom—				
E. Nagel & Son, Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		3.00		
Minneapolis Floral Co., Minneapolis.....			2.00	
Collection of carnations in bloom—				
E. Nagel & Son, Minneapolis.....	3.00			
Minneapolis Floral Co., Minneapolis.....		2.00		
Vase filled with plants—				
E. Nagel & Son, Minneapolis.....	5.00			
Minneapolis Floral Co., Minneapolis.....		4.00		
John Vasatka, Minneapolis.....			3.00	

CUT FLOWERS.

(Open to all.)

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Best collection of cut flowers, not less than fifteen varieties—				
Minneapolis Floral Co., Minneapolis.....	25.00			
E. Nagel & Son, Minneapolis.....		15.00		
John Vasatka, Minneapolis.....			10.00	
Collection of dahlias—				
Geo. E. Kersten, Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		2.50		
Collection of sweet peas—				
E. Nagel & Son, Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		2.50		
Collection of asters—				
E. Nagel & Son, Minneapolis.....	4.00			
Mary Murphy, Stillwater.....		2.50		
John Vasatka, Minneapolis.....			1.50	
Collection of carnations—				
Minneapolis Floral Co., Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		2.50		
E. Nagel & Son, Minneapolis.....			1.50	
Collection of roses—				
Minneapolis Floral Co., Minneapolis.....	4.00			
John Vasatka, Minneapolis.....		2.50		
E. Nagel & Son, Minneapolis.....				
Collection of gladioli—				
Geo. E. Kersten, Minneapolis.....	4.00			
E. Nagel & Son, Minneapolis.....		2.50		
John Vasatka, Minneapolis.....			1.50	

DESIGNS, BASKETS AND BOUQUETS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Table decorations—				
Minneapolis Floral Co., Minneapolis.....	\$30.00			
R. A. Latham, Minneapolis.....		25.00		
E. Nagel & Son, Minneapolis.....			20.00	
John Vasatka, Minneapolis.....				15.00
Twelve-inch basket of flowers—				
Minneapolis Floral Co., Minneapolis.....	5.00			
E. Nagel & Son, Minneapolis.....		3.00		
John Vasatka, Minneapolis.....			2.00	
Table bouquet—				
Minneapolis Floral Co., Minneapolis.....	5.00			
E. Nagel & Son, Minneapolis.....		3.00		
Charles Krause, Rosetown.....			2.00	
John Vasatka, Minneapolis.....				1.00
Hand bouquet—				
Minneapolis Floral Co., Minneapolis.....	3.00			
E. Nagel & Son, Minneapolis.....		2.00		
John Vasatka, Minneapolis.....			1.00	
Bridal bouquet—				
Minneapolis Floral Co., Minneapolis.....	3.00			
John Vasatka, Minneapolis.....		2.00		
E. Nagel & Son, Minneapolis.....			1.00	

CLASS 70—CUT FLOWERS.

(For amateurs.)

CUT FLOWERS.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Collection of cannas—				
Collection of asters—				
Edwin Doble, St. Anthony Park.....	\$4.00			
R. A. Koepker, Minneapolis.....	2.50			
F. F. Farrar, White Bear Lake.....		1.50		
E. D. Fuller, Minneapolis.....			1.00	
Collection of dahlias—				
F. F. Farrar, White Bear Lake.....	4.00			
Geo. E. Kersten, Minneapolis.....	2.50			
E. A. Farmer, Minneapolis.....		1.50		
J. M. Scharff, St. Paul.....			1.00	
Collection of nasturtiums—				
H. B. Tillotson, Eureka.....	4.00			
J. M. Scharff, St. Paul.....	2.50			
W. W. Hill, Minneapolis.....		1.50		
Edwin Doble, St. Anthony Park.....			1.00	
Collection of gladioli—				
C. M. Hoag, Minneapolis.....	4.00			
F. F. Farrar, White Bear Lake.....	2.50			
Geo. E. Kersten, Minneapolis.....		1.50		
S. R. Spates, Wayzata.....			1.00	
Collection of marguerite carnations—				
Chas. Krause, Rosetown.....	4.00			
D. Gantzer, Merriam Park.....	2.50			
F. H. Gibbs, Merriam Park.....		1.50		
Collection of pansies—				
S. M. C. Browne, St. Paul.....	4.00			
Chas. Krause, Rosetown.....	2.50			
F. F. Farrar, White Bear Lake.....		1.00		
Daniel Gantzer, Merriam Park.....			1.00	
Collection of verbenas—				
R. A. Koepker, Minneapolis.....	4.00			
W. L. Cook, St. Paul.....	2.50			
Edwin Doble, St. Anthony Park.....		1.50		
Chas. Krause, Rosetown.....			1.00	
Collection of zinnias—				
F. F. Farrar, White Bear Lake.....	4.00			
S. M. C. Browne, St. Paul.....	2.50			
Chas. Krause, Rosetown.....		1.50		
Daniel Gantzer, Merriam Park.....			1.00	
Collection of perennial phlox—				
B. T. Hoyt, St. Paul.....	4.00			
S. R. Spates, Wayzata.....	2.50			
F. H. Gibbs, Merriam Park.....		1.50		
either fall or winter—				
Collection of sweet peas—				
DeMitt Clinton Ruff, St. Paul.....	4.00			
A. McPhee, St. Paul.....	2.50			
S. R. Spates, Wayzata.....		1.50		
M. K. Bond, Minneapolis.....			1.00	

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Collection of Snap-Dragon—				
DeMitt Clinton Ruff, St. Paul.....	4.00			
Chas. Krause, Rosetown.....		2.50		
Edwin Doble, St. Anthony Park.....			1.50	
Daniel Gantzer, Merriam Park.....				1.00
Collection of gallardia—				
Chas. Krause, Rosetown.....	4.00			
Daniel Gantzer, Merriam Park.....		2.50		
DeMitt Clinton Ruff, St. Paul.....			1.50	
Best collection of perennials, not less than 10 varieties—				
B. T. Hoyt, St. Paul.....	4.00			
DeMitt Clinton Ruff, St. Paul.....		3.00		
F. H. Gibbs, Merriam Park.....			2.00	
Best collection of annuals, not less than 15 varieties—				
Chas. Krause, Rosetown.....	4.00			
Daniel Gantzer, Merriam Park.....		3.00		
DeMitt Clinton Ruff, St. Paul.....			2.00	

DIVISION H—HONEY BEES AND APIARIAN SUPPLIES.

Premiums awarded \$499.00

Superintendent—J. M. Underwood, Lake City.

Assistant Superintendent—Wm. Russell, Minneapolis.

CLASS 71—HONEY.

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Most attractive and finest display of comb honey—				
H. G. Acklin, St. Paul.....	\$12.00			
Moser Aparies, St. Louis Park.....		10.00		
Stiles Lindersmith, Faribault.....			7.00	
J. B. Jardine, Wayzata.....				5.00
Case white clover honey, 12 to 24 pounds—				
J. B. Jardine, Wayzata.....	12.00			
Moser Aparies, St. Louis Park.....		8.00		
H. G. Acklin, St. Paul.....			5.00	
Alf. A. Ziemer, Waltham.....				3.00
Case, basswood or Linden comb honey, 12 to 24 pounds—				
J. B. Jardine, Wayzata.....	12.00			
Chas. Mondeng, Minneapolis.....		8.00		
Stiles Lindersmith, Faribault.....			5.00	
Moser Aparies, St. Louis Park.....				3.00
Case other white comb honey, 12 to 24 pounds—				
T. E. Bly, Brewster.....	12.00			
Moser Aparies, St. Louis Park.....		8.00		
J. F. Ziemer, Waltham.....			5.00	
H. G. Acklin, St. Paul.....				3.00

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Case amber comb honey, 12 to 24 pounds—				
J. F. Ziemer, Waltham.....	10.00			
Alf. A. Ziemer, Waltham.....		6.00		
Chas. Mondeng, Minneapolis.....			4.00	
T. E. Bly, Brewster.....				2.00
Display of comb honey in extracting frames—				
J. B. Jardine, Wayzata.....	10.00			
H. G. Acklin, St. Paul.....		6.00		
Stiles Lindersmith, Faribault.....			4.00	
Moser Apiaries, St. Louis Park.....				2.00
Most attractive and finest display of extracted honey—				
Moser Apiaries, St. Louis Park.....	12.00			
H. G. Acklin, St. Paul.....		8.00		
J. B. Jardine, Wayzata.....			5.00	
G. A. Forgerson, Rosemount.....				3.00
Case extracted white clover honey, 12 lbs. or more in glass, labeled—				
Mrs. W. R. Ansell, St. Paul.....	12.00			
H. G. Acklin, St. Paul.....		8.00		
Moser Apiaries, St. Louis Park.....			5.00	
J. B. Jardine, Wayzata.....				3.00
Case extracted basswood or Linden honey, 12 lbs. or more in glass, labeled—				
Stiles Lindersmith, Faribault.....	12.00			
Moser Apiaries, St. Louis Park.....		8.00		
H. G. Acklin, St. Paul.....			5.00	
J. B. Jardine, Wayzata.....				3.00
Case other white extracted honey, 12 or more lbs. in glass—				
Mrs. W. R. Ansell, St. Paul.....	10.00			
H. G. Acklin, St. Paul.....		6.00		
Hamlin V. Poor, Bird Island.....			4.00	
Stiles Lindersmith, Faribault.....				2.00
Case extracted amber honey, 12 lbs. or more in glass—				
Moser Apiaries, St. Louis Park.....	10.00			
J. B. Jardine, Wayzata.....		6.00		
J. F. Ziemer, Waltham.....			4.00	
H. G. Acklin, St. Paul.....				2.00
Display extracted honey from greatest number of flowers, in glass—				
H. G. Acklin, St. Paul.....	5.00			
J. B. Jardine, Wayzata.....		3.00		
Mrs. W. R. Ansell, St. Paul.....			1.00	
Display, extracted honey granulated or candied—				
Mrs. W. R. Ansell, St. Paul.....	8.00			
G. A. Forgerson, Rosemount.....		5.00		
Moser Apiaries, St. Louis Park.....			4.00	
H. G. Acklin, St. Paul.....				2.00
Beeswax, best quality, 10 lbs. or more—				
H. G. Acklin, St. Paul.....	5.00			
Mrs. W. R. Ansell, St. Paul.....		4.00		
T. E. Bly, Brewster.....			3.00	
Stiles Lindersmith, Faribault.....				2.00
Honey vinegar, not less than 1 gallon in glass—				
H. G. Acklin, St. Paul.....	5.00			
G. A. Forgerson, Rosemount.....		4.00		
Moser Apiaries, St. Louis Park.....			3.00	
J. B. Jardine, Wayzata.....				2.00

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Best display of pies, sweetened with honey—quality considered—				
H. G. Acklin, St. Paul.....	4.00			
J. B. Jardine, Wayzata.....		3.00		
Moser Apiaries, St. Louis Park.....			2.00	
Mrs. W. R. Ansell, St. Paul.....				1.00
Best display of honey cake, quality considered—				
H. G. Acklin, St. Paul.....	4.00			
Moser Apiaries, St. Louis Park.....		3.00		
Mrs. W. R. Ansell, St. Paul.....			2.00	
J. B. Jardine, Wayzata.....				1.00
Best display of canned fruit, put up with honey—				
H. G. Acklin, St. Paul.....	4.00			
Mrs. W. R. Ansell, St. Paul.....		3.00		
Moser Apiaries, St. Louis Park.....			2.00	
J. B. Jardine, Wayzata.....				1.00
Best display of marmalades, jams and jellies put up with honey—				
H. G. Acklin, St. Paul.....	4.00			
Mrs. W. R. Ansell, St. Paul.....		3.00		
Moser Apiaries, St. Louis Park.....			2.00	
Mrs. W. R. Ansell, St. Paul.....				1.00
Best display of plain pickles in honey vinegar—				
H. G. Acklin, St. Paul.....	5.00			
Moser Apiaries, St. Louis Park.....		3.00		
J. B. Jardine, Wayzata.....			2.00	
Mrs. W. R. Ansell, St. Paul.....				1.00
Best display of sweet pickles put up with honey and honey vinegar—				
H. G. Acklin, St. Paul.....	5.00			
Moser Apiaries, St. Louis Park.....		3.00		
Mrs. W. R. Ansell, St. Paul.....			2.00	
J. B. Jardine, Wayzata.....				1.00
Best display, variety of uses for honey, illustrated by individual samples of different things into which it enters other than above noted—				
Mrs. W. R. Ansell, St. Paul.....	5.00			
H. G. Acklin, St. Paul.....		4.00		
Moser Apiaries, St. Louis Park.....			3.00	
J. B. Jardine, Wayzata.....				2.00
Nucleus of golden yellow Italian bees and queen—				
Chas. Mondeng, Minneapolis.....	8.00			
Moser Apiaries, St. Louis Park.....		5.00		
H. G. Acklin, St. Paul.....			3.00	
Alf. A. Ziemer, Waltham.....				2.00
Nucleus of dark or leather color Italian bees and queen—				
H. G. Acklin, St. Paul.....	8.00			
Moser Apiaries, St. Louis Park.....		5.00		
Chas. Mondeng, Minneapolis.....			3.00	
Mrs. W. R. Ansell, St. Paul.....				2.00
GRAND SWEEPSTAKES.				
Largest, best and most attractive exhibition in this department, all things considered—				
Moser Apiaries, St. Louis Park.....	15.00			
H. G. Acklin, St. Paul.....		12.00		
J. B. Jardine, Wayzata.....			9.00	
Stiles Lindersmith, Faribault.....				6.00

DIVISION J—VEGETABLES, GRAIN AND FARM PRODUCE.

Premiums awarded.....\$3,763.89

Superintendent—J. M. Underwood, Lake City.

CLASS 72—VEGETABLES.

	1st Prem.	2nd Prem.	3rd Prem.
Lot 1—Collection of not less than 20 varieties, of not less than 10 specimens of each, except pumpkin, squash, watermelon and cabbage, 3 each. Money to be divided according to score, 100 to be taken as a standard. (\$100 to be divided pro rata)—			
Chas. Krause, Rosetown.....	\$51.13		
Daniel Gantzer, Merriam Park.....	48.87		
Additional money paid in Lot 1.			
Collection of herbs—			
Chas. C. Gray, Rochester.....	\$2.00		
L. V. Crandall, Red Wing.....	1.00		
Chas. Krause, Rosetown.....	.50		
Beans in edible green pod—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....	1.00		
John Gantzer, St. Paul.....	.50		
Beans, wax in pod—			
John Gantzer, St. Paul.....	2.00		
Mr. Chas. Krause, Rosetown.....	1.00		
Chas. C. Gray, Rochester.....	.50		
Beans, dwarf lima, pod—			
H. Krause, Merriam Park.....	2.00		
Chas. Krause, Rosetown.....	1.00		
Daniel Gantzer, Merriam Park.....	.50		
Beans, pole lima—			
Daniel Gantzer, Merriam Park.....	2.00		
H. Krause, Merriam Park.....	1.00		
Chas. Krause, Rosetown.....	1.50		
Beans, in green pod, not named above—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....	1.00		
Geo. Poor, Hastings.....	.50		
Beans, white navy—			
George Poor, Hastings.....	2.00		
R. C. Keel, Rochester.....	1.00		
Chas. Krause, Rosetown.....	.50		
Beans, any other variety—			
George Poor, Hastings.....	2.00		
R. C. Keel, Rochester.....	1.00		
Chas. Krause, Rosetown.....	.50		
Beets, for table use—			
Chas. Krause, Rosetown.....	2.00		
F. H. Gibbs, Merriam Park.....	1.00		
August Giesmann, Merriam Park.....	.50		
Beets, sugar—			
Fred Sprengeler, Cologne.....	2.00		
Chas. Krause, Rosetown.....	1.00		
Fred Sprengeler, Cologne.....	.50		

		1st Prem.	2nd Prem.	3rd Prem.
Beets, mangel-wurtzels—				
Joe Taylor, Medford.....	2.00			
E. O. Evestedt, Sacred Heart.....		1.00		
Chas. Krause, Rosetown.....			.50	
Beets, any other variety—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
John Gantzer, St. Paul.....			.50	
Brussel sprouts—				
H. Krause, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Daniel Gantzer, Merriam Park.....			.50	
Cabbage, drumhead—				
F. H. Gibbs, Merriam Park.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
August Giesmann, Merriam Park.....			.50	
Cabbage, round head—				
Chas. Krause, Rosetown.....	2.00			
F. H. Gibbs, Merriam Park.....		1.00		
August Giesmann, Merriam Park.....			.50	
Cabbage, red, any variety—				
August Giesmann, Merriam Park.....	2.00			
John Gantzer, St. Paul.....		1.00		
Chas. Krause, Rosetown.....			.50	
Carrots, for table use—				
Christ Johnson, Osseo.....	2.00			
Christ Johnson, Osseo.....		1.00		
Chas. Krause, Rosetown.....			.50	
Carrots, for stock—				
Fred Sprengeler, Cologne.....	2.00			
Fred Sprengeler, Cologne.....		1.00		
F. F. Farrar, White Bear.....			.50	
Cauliflower—				
Herman Busse, Two Rivers.....	2.00			
F. H. Gibbs, Merriam Park.....		1.00		
John Gantzer, St. Paul.....			.50	
Celery, golden self-blanching—				
J. C. Highhouse, Little Falls.....	2.00			
Herman Busse, Two Rivers.....		1.00		
Daniel Gantzer, Merriam Park.....			.50	
Celery, white plume—				
J. C. Highhouse, Little Falls.....	2.00			
J. C. Highhouse, Little Falls.....		1.00		
J. C. Highhouse, Little Falls.....			.50	
Celery, turnip rooted—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Celery, any other variety—				
J. C. Highhouse, Little Falls.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
Chas. Krause, Rosetown.....			.50	
Corn, sweet, best early—				
J. W. Beckman, Cokato.....	2.00			
Joe Taylor, Medford.....		1.00		
E. A. Farmer, Minneapolis.....			.50	
Corn, sweet, best medium—				
Chas. C. Gray, Rochester.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Frank Dunning, Osseo.....			.50	

		1st Prem.	2nd Prem.	3rd Prem.
Corn, sweet, best late—				
Chas. C. Gray, Rochester.....	2.00			
Joe Taylor, Medford.....		1.00		
John Gantzer, St. Paul.....			.50	
Cucumbers, for table use, any variety of white spine—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
John Gantzer, St. Paul.....			.50	
Cucumbers, for table use, any other variety—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. C. Gray, Rochester.....		1.00		
John Gantzer, St. Paul.....			.50	
Cucumbers, for pickling—				
John Gantzer, St. Paul.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
Chas. Krause, Rosetown.....			.50	
Cucumbers, ripe, for pickling—				
J. C. Highhouse, Little Falls.....	2.00			
John Gantzer, St. Paul.....		1.00		
Fred Sprengeler, Cologne.....			.50	
Citron, for preserves—				
L. V. Crandall, Red Wing.....	2.00			
Chas. Krause, Rosetown.....		1.00		
John Gantzer, St. Paul.....			.50	
Egg plant—				
Daniel Gantzer, Merriam Park.....	2.00			
John Gantzer, St. Paul.....		1.00		
H. Krause, Merriam Park.....			.50	
Endive—				
Daniel Gantzer, Merriam Park.....	2.00			
H. Krause, Merriam Park.....		1.00		
Chas. Krause, Merriam Park.....			.50	
Ginseng—				
W. W. Hill, Minneapolis.....	2.00			
W. W. Hill, Minneapolis.....		1.00		
S. R. Spates, Wayzata.....			.50	
Kohlrabi—				
Chas. Krause, Rosetown.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
H. Krause, Merriam Park.....			.50	
Kale—				
Daniel Gantzer, Merriam Park.....	2.00			
August Giesmann, Merriam Park.....		1.00		
Chas. Waldmann, Minneapolis.....			.50	
Leek—				
Chas. Krause, Rosetown.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
John Gantzer, St. Paul.....			.50	
Lettuce head—				
John Gantzer, St. Paul.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
Lettuce leaf—				
John Gantzer, St. Paul.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Onions, yellow globe—				
Daniel Gantzer, Merriam Park.....	2.00			
F. H. Gibbs, Merriam Park.....		1.00		
Chas. Krause, Rosetown .....			.50	

	1st Prem.	2nd Prem.	3rd Prem.
Onions, red globe—			
Louis Anderson, Rochester.....	2.00		
R. C. Keel, Rochester.....		1.00	
Chas. C. Gray, Rochester.....			.50
Onions, white globe—			
Chas. C. Gray, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
F. H. Gibbs, Merriam Park.....			.50
Onions, for pickling—			
Chas. C. Gray, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Chas. Krause, Rosetown.....			.50
Onion sets, white bottom—			
Chas. C. Gray, Rochester.....	2.00		
Louis Anderson, Rochester.....		1.00	
R. C. Keel, Rochester.....			.50
Onion sets, red bottom—			
L. V. Crandall, Red Wing.....	2.00		
Chas. C. Gray, Rochester.....		1.00	
Chas. Krause, Rosetown.....			.50
Onion sets, yellow bottom—			
Chas. C. Gray, Rochester.....	2.00		
Chas. C. Gray, Rochester.....		1.00	
Louis Anderson, Rochester.....			.50
Onion sets, multipliers—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
John Gantzer, St. Paul.....			.50
Onion sets, Egyptian—			
Chas. Krause, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Herman Busse, Two Rivers.....			.50
Okra—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
H. Krause, Merriam Park.....			.50
Parsnips, long, smooth—			
August Giesmann, Merriam Park.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
John Gantzer, St. Paul.....			.50
Parsley—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Chas. C. Gray, Rochester.....			.50
Peas, early—			
R. C. Keel, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Chas. C. Gray, Rochester.....			.50
Peas, medium early—			
Chas. C. Gray, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
L. V. Crandall, Red Wing.....			.50
Peas, late—			
Chas. C. Gray, Rochester.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
L. V. Crandall, Red Wing.....			.50

	1st Prem.	2nd Prem.	3rd Prem.
Peppers, large sweet—			
F. F. Farrar, White Bear.....	2.00		
Mrs. DeWitt Clinton Ruff, St. Paul.....		1.00	
Daniel Gantzer, Merriam Park.....			.50
Peppers, cayenne—			
Daniel Gantzer, Merriam Park.....	2.00		
Chas. Krause, Rosetown.....		1.00	
John Gantzer, St. Paul.....			.50
Peppers, any other variety—			
Daniel Gantzer, Merriam Park.....	2.00		
Mrs. DeWitt Clinton Ruff, St. Paul.....		1.00	
John Gantzer, St. Paul.....			.50
Potatoes, best collection (\$70 to be divided pro rata)—			
G. A. Forgerson, Rosemount.....	7.04		
L. V. Crandall, Red Wing.....	6.96		
Chas. C. Gray, Rochester.....	6.89		
Joe Taylor, Medford.....	6.73		
Louis Anderson, Rochester.....	6.50		
Christ Johnson, Osseo		6.43	
Arthur Cooper, St. Cloud.....	6.12		
Chas. Krause, Rosetown.....	6.04		
F. F. Farrar, White Bear.....	5.97		
C. H. Murphy, Caledonia.....	5.74		
John Gantzer, St. Paul.....	5.58		
Potatoes, best early—			
Christ Johnson, Osseo.....	5.00		
Chas. C. Gray, Rochester.....		3.00	
Frank Dunning, Osseo.....			2.00
Potatoes, best medium—			
Arthur Cooper, St. Cloud.....	5.00		
F. F. Farrar, White Bear.....		3.00	
Fred Sprengeler, Cologne.....			2.00
Potatoes, best late—			
Louis Anderson, Rochester.....	15.00		
F. F. Farrar, White Bear.....		10.00	
Chas. C. Gray, Rochester.....			5.00
Pumpkins, field—			
Chas. Krause, Rosetown.....	2.00		
F. F. Farrar, White Bear.....		1.00	
Pumpkins, pie yellow—			
John Gantzer, St. Paul.....	2.00		
Christ Johnson, Osseo.....		1.00	
Don. Losey, Minneapolis.....			.50
Pumpkins, pie white—			
Chas. C. Gray, Rochester.....	2.00		
F. F. Farrar, White Bear.....		1.00	
Daniel Gantzer, Merriam Park.....			.50
Radishes, scarlet turnip—			
John Gantzer, St. Paul.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Radishes, long scarlet—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Radishes, long white—			
Chas. Krause, Rosetown.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	

		1st Prem.	2nd Prem.	3rd Prem.
Radishes, any winter variety—				
Chas. Krause, Rosetown.....	2.00			
H. Krause, Merriam Park.....		1.00		
Daniel Gantzer, Merriam Park.....			.50	
Rhubarb—				
Chas. Krause, Rosetown.....	2.00			
John Gantzer, St. Paul.....		1.00		
Daniel Gantzer, Merriam Park.....			.50	
Rutabagas, for stock, any variety—				
Fred Sprengeler, Cologne.....	2.00			
Fred Sprengeler, Cologne.....		1.00		
John Gantzer, St. Paul.....			.50	
Rutabagas for table use, any variety—				
Joe Taylor, Medford.....	2.00			
Fred Sprengeler, Cologne.....		1.00		
Fred Sprengeler, Cologne.....			.50	
Salsify, largest and smoothest roots—				
August Giesmann, Merriam Park.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
Chas. Krause, Rosetown.....			.50	
Spinach—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Squash, Hubbard—				
Frank Dunning, Osseo.....	4.00			
Frank Dunning, Osseo.....		3.00		
John Gantzer, St. Paul.....				2.00
Squash, Summer Crookneck—				
Chas. C. Gray, Rochester.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Squash, for stock—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Sunflower, Mammoth Russian—				
J. M. Scharff, St. Paul.....	2.00			
Chas. Krause, Rosetown.....		1.00		
Don. Losey, Minneapolis.....			.50	
Sunflower, other variety—				
J. W. Beckman, Cokato.....	2.00			
J. M. Scharff, St. Paul.....		1.00		
Chas. Krause, Rosetown.....			.50	
Swiss Chard—				
Daniel Gantzer, Merriam Park.....	2.00			
Chas. Krause, Rosetown.....		1.00		
H. Krause, Merriam Park.....			.50	
Tobacco Plant—				
Chas. Krause, Rosetown.....	2.00			
Daniel Gantzer, Merriam Park.....		1.00		
Tomatoes, early red—				
Chas. C. Gray, Rochester.....	3.00			
F. F. Farrar, White Bear.....		2.00		
Charles Waldmann, Minneapolis.....				1.00
Tomatoes, medium red—				
Chas. C. Gray, Rochester.....	2.00			
F. F. Farrar, White Bear.....		1.00		
F. H. Gibbs, Merriam Park.....			.50	

	1st Prem.	2nd Prem.	3rd Prem.
Tomatoes, late red—			
Chas. C. Gray, Rochester.....	3.00		
J. C. Highhouse, Little Falls.....		2.00	
Chas. C. Krause, Rosetown.....			1.00
Tomatoes, yellow preserving—			
Charles Waldmann, Minneapolis.....	2.00		
F. H. Gibbs, Merriam Park.....		1.00	
Chas. Krause, Rosetown.....			.50
Turnips, strap leaf, purple top—			
Fred Sprengeler, Cologne.....	2.00		
Joe Taylor, Medford.....		1.00	
Daniel Gantzer, Merriam Park.....			.50
Turnips, White Globe—			
Chas. Krause, Rosetown.....	2.00		
Fred Sprengeler, Cologne.....		1.00	
Fred Sprengeler, Cologne.....			.50

MELONS.

	1st. Prem.	2nd. Prem.	3rd. Prem.
Muskmelons, best early—			
F. F. Farrar, White Bear.....	\$3.00		
Mrs. DeWitt Clinton Ruff, St. Paul.....		2.00	
Chas. Krause, Rosetown.....			1.00
Muskmelons, best late yellow—			
Chas. Krause, Rosetown.....	3.00		
Mrs. DeWitt Clinton Ruff, St. Paul.....		2.00	
Muskmelons, best late green—			
Chas. Krause, Rosetown.....	3.00		
Watermelons, best early—			
Chas. Krause, Rosetown.....	2.00		
E. G. Evestredt, Sacred Heart.....		1.00	
F. F. Farrar, White Bear.....			.50
Watermelons, best medium—			
Chas. Krause, Rosetown.....	2.00		
Watermelons, best late—			
Chas. Krause, Rosetown.....			.50

LARGEST SPECIMENS.

	1st. Prem.	2nd. Prem.	3rd. Prem.
Largest beet—			
Fred Sprengeler, Cologne.....	\$2.00		
Fred Sprengeler, Cologne.....		1.00	
Joe Taylor, Medford.....			.50
Largest cabbage—			
Daniel Gantzer, Merriam Park.....	3.00		
F. H. Gibbs, Merriam Park.....		2.00	
John Gantzer, St. Paul.....			1.00
Largest cucumber—			
O. J. Beckman, Cokato.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
J. W. Beckman, Cokato.....			.50
Largest onion—			
Herman Busse, Two Rivers.....	2.00		
Daniel Gantzer, Merriam Park.....		1.00	
Herman Busse, Two Rivers.....			.50

	1st Prem.	2nd Prem.	3rd Prem.
Largest pumpkin—			
Harold Pattee, Minneapolis.....	3.00		
C. H. Murphy, Caledonia.....		2.00	
Chas. Krause, Rosetown.....			1.00
Largest squash—			
Daniel Gantzer, Merriam Park.....	3.00		
C. H. Murphy, Caledonia.....		2.00	
Chas. Krause, Rosetown.....			1.00
Largest Watermelon—			
Chas. Krause, Rosetown.....	3.00		
Daniel Gantzer, Merriam Park.....		2.00	
E. G. Evestredt, Sacred Heart.....			1.00
Largest potato—			
C. H. Murphy, Caledonia.....	3.00		
Marian DeWitt, Hammond.....		2.00	
Fred Sprengeler, Cologne.....			1.00
Largest carrot—			
Fred Sprengeler, Cologne.....	2.00		
Fred Sprengeler, Cologne.....		1.00	
Joe Taylor, Medford.....			.50

CLASS 72—FIELD CROPS.

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Collection of threshed grains (\$150 to be divided pro rata)—				
C. H. Murphy, Caledonia.....	\$21.79			
George Poor, Hastings.....	19.64			
G. A. Forgorson, Rosemount.....	18.25			
J. A. Howard, Hammond.....	18.07			
Marian DeWitt, Hammond.....	17.89			
J. W. Beckman, Cokato.....	17.89			
Fred Sprengeler, Cologne.....	17.74			
L. V. Crandall, Red Wing.....	17.73			

GRAINS.

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Best exhibit of small grains, wheat, oats, barley and flax; threshed and in straw; \$60.00 to be divided among all exhibitors—				•
R. C. Keel, Rochester.....	\$9.07			
George Poor, Hastings.....	8.26			
L. V. Crandall, Red Wing.....	7.73			
Marian DeWitt, Hammond.....	7.27			
A. B. Crandall, Red Wing.....	7.02			
J. A. Howard, Hammond.....	6.91			
G. A. Forgorson, Rosemount.....	6.91			
C. H. Murphy, Caledonia.....	6.83			
Wheat, red fife, one peck—				
Chas. C. Gray, Rochester.....	5.00			
G. A. Forgorson, Rosemount.....		4.00		
T. Gray, Rochester.....			3.00	
George Poor, Hastings.....				1.00
Wheat, blue stem, one peck—				
Fred Sprengeler, Cologne.....	5.00			
Fred Sprengeler, Cologne.....		4.00		
J. W. Beckman, Cokato.....			3.00	
Chas. C. Gray, Rochester.....				1.00

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Wheat, winter red, one peck—				
Fred Sprengeler, Cologne.....	5.00			
T. Gray, Rochester.....		4.00		
Fred Sprengeler, Cologne.....			3.00	1.00
Wheat, winter light, one peck—				
Arthur Cooper, St. Cloud.....	5.00			
George Poor, Hastings.....		4.00		
J. W. Beckman, Cokato.....			3.00	
Chas. C. Gray, Rochester.....				1.00
Wheat, Minnesota No. 163, one peck—				
A. H. Gruenhagen, Norwood.....	5.00			
Chas. C. Gray, Rochester.....		4.00		
G. A. Forgorson, Rosemount.....			3.00	
George Poor, Hastings.....				1.00
Wheat, Minnesota 169, one peck—				
Fred Sprengeler, Cologne.....	5.00			
E. G. Evestredt, Sacred Heart.....		4.00		
J. W. Beckman, Cokato.....			3.00	
A. H. Gruenhagen, Norwood.....				1.00
Wheat, macaroni, one peck—				
C. H. Murphy, Caledonia.....	5.00			
Fred Sprengeler, Cologne.....		4.00		
Fred Sprengeler, Cologne.....			3.00	
George Poor, Hastings.....				1.00
Wheat, best collection of three or more varieties (one peck each)—				
Fred Sprengeler, Cologne.....	5.00			
A. H. Gruenhagen, Norwood.....		4.00		
E. G. Evestredt, Sacred Heart.....			3.00	
Arthur Cooper, St. Cloud.....				1.00
Barley, white six rowed—				
A. B. Crandall, Red Wing.....	4.00			
L. V. Crandall, Red Wing.....		2.00		
Chas. C. Gray, Rochester.....				1.00
Barley, white, two rowed—				
L. V. Crandall, Red Wing.....	4.00			
Barley, black—				
G. A. Forgorson, Rosemount.....	4.00			
C. H. Murphy, Caledonia.....		2.00		
George Poor, Hastings.....				1.00
Barley, any other variety—				
Arthur Cooper, St. Cloud.....	4.00			
George Poor, Hastings.....		2.00		
Oats, white, side panicle—				
Fred Sprengeler, Cologne.....	4.00			
A. H. Gruenhagen, Norwood.....		2.00		
Chas. C. Gray, Rochester.....				1.00
Oats, white spreading Panicle—				
Chas. C. Gray, Rochester.....	4.00			
T. Gray, Rochester.....				1.00
Rye, winter—				
Fred Sprengeler, Cologne.....	4.00			
J. W. Beckman, Cokato.....		2.00		
Arthur Cooper, St. Cloud.....				1.00
Rye, spring—				
George Por, Hastings.....	4.00			
Buckwheat, silver hulled—				
G. A. Forgorson, Rosemount.....	4.00			
Chas. C. Gray, Rochester.....		2.00		
George Poor, Hastings.....				1.00
Buckwheat, common black—				
C. E. Murphy, Caledonia.....	4.00			
George Poor, Hastings.....		2.00		

CORN—FLINT VARIETIES.

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Corn, King Philip, 15 ears—				
Joe Taylor, Medford.....	\$3.00			
Corn, White Flint, 15 ears—				
Joe Taylor, Medford.....	3.00	2.00		
C. H. Murphy, Caledonia.....		2.00		
Joe Taylor, Medford.....			1.00	
Corn, Yellow Flint, 15 ears—				
J. W. Beckman, Cokato.....	\$3.00			
John Murphy, Caledonia.....		2.00		
C. E. Murphy, Caledonia.....			1.00	
Corn, Smut Nose, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
Joe Taylor, Medford.....		2.00		
J. W. Beckman, Cokato.....			1.00	

CORN—YELLOW DENT VARIETIES.

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Corn, Minnesota King, 15 ears—				
J. M. Scharff, St. Paul.....	\$3.00			
Joe Taylor, Medford.....		2.00		
J. W. Beckman, Cokato.....			1.00	
Corn, Dakota Dent, 15 ears—				
J. M. Scharff, St. Paul.....	3.00			
Fred Sprengeler, Cologne.....		2.00		
J. W. Beckman, Cokato.....			1.00	
Corn, Improved Mastodon, 15 ears—				
E. G. Evestredt, Sacred Heart.....	3.00			
Fred Sprengeler, Cologne.....		2.00		
Joe Taylor, Medford.....			1.00	
Corn, Minnesota Early Yellow Dent, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
C. E. Murphy, Caledonia.....		2.00		
Joe Taylor, Medford.....			1.00	
Corn, University, No. 13, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
Joe Taylor, Medford.....		2.00		
C. E. Murphy, Caledonia.....			1.00	

CORN—WHITE DENT VARIETIES.

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Corn, White Pearl, 15 ears—				
C. H. Murphy, Caledonia.....	\$3.00			
J. W. Beckman, Cokato.....		2.00		
Joe Taylor, Medford.....			1.00	
Corn, Iowa Silver Mine, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
Joe Taylor, Medford.....		2.00		
Corn, Minnesota White Dent, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
E. G. Evestredt, Sacred Heart.....		2.00		
Fred Sprengeler, Cologne.....			1.00	
Corn, Rustler, 15 ears—				
Joe Taylor, Medford.....	3.00			
E. G. Evestredt, Sacred Heart.....		2.00		
J. W. Beckman, Cokato.....			1.00	

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Corn, White Rice Pop Corn, 15 ears—				
Marian DeWitt, Hammond.....	3.00			
Corn, Red Jacket, Pop Corn, 15 ears—				
C. H. Murphy, Caledonia.....	3.00			
J. W. Beckman, Cokato.....		2.00		
Corn, broom seed, 10 heads—				
L. V. Crandall, Red Wing.....	3.00			
A. B. Crandall, Red Wing.....		2.00		
O. J. Beckman, Cokato.....			1.00	

SWEEPSTAKES COLLECTION.

Best exhibit of corn husked and in stalk (\$100.00 to be divided pro rata)—

Joe Taylor, Medford.....	\$11.73
E. G. Evestredt, Sacred Heart.....	10.73
Fred Sprengeler, Cologne.....	10.36
Chas. C. Gray, Rochester.....	9.99
J. A. Howard, Hammond.....	9.61
A. B. Crandall, Red Wing.....	9.36
Marion DeWitt, Hammond.....	9.13
H. Krause, Merriam Park.....	8.87
C. H. Murphy, Caledonia.....	10.23

	1st. Prem.	2nd. Prem.	3rd. Prem.	4th. Prem.
Flax seed—				

George Poor, Hastings.....	3.00
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Flax grown for fiber—

A. W. Edson, Austin.....	3.00
R. C. Keel, Rochester.....	2.00
George Poor, Hastings.....	1.00

Timothy seed—

C. H. Murphy, Caledonia.....	3.00
George Poor, Hastings.....	2.00
Chas. C. Gray, Rochester	1.00

Timothy in straw—

Chas. C. Gray, Rochester.....	2.00
Marion DeWitt, Hammond.....	1.00
George LaFond, Little Falls.....	.50

Brome grass seed—

C. H. Murphy, Caledonia.....	3.00
Chas. C. Gray, Rochester.....	2.00

Brome grass in straw—

Chas. C. Gray, Rochester.....	2.00
T. Gray, Rochester.....	1.00

Kentucky Blue Grass—

L. V. Crandall, Red Wing.....	3.00
Arthur Cooper, St. Cloud.....	2.00

Millet, or Hungarian seed—

Arthur Cooper, St. Cloud.....	3.00
L. V. Crandall, Red Wing.....	2.00
C. E. Murphy, Caledonia.....	1.00

Millet, or Hungarian straw—

Chas. C. Gray, Rochester.....	2.00
Joe Taylor, Medford.....	1.00
Louis Anderson, Rochester.....	.50

Rape, stalks—

Chas. Krause, Rosetown.....	2.00
Daniel Gantzer, Merriam Park.....	1.00
L. V. Crandall, Red Wing.....	.50

	1st Prem.	2nd Prem.	3rd Prem.	4th Prem.
Red clover in bundles—				
J. A. Howard, Hammond.....	2.00			.
Chas. C. Gray, Rochester.....		1.00		
Daniel Gantzer, Merriam Park.....			.50	
Red Top—				
L. V. Crandall, Red Wing.....	3.00			
Speltz seed—				
Chas. C. Gray, Rochester.....	3.00			
George Poor, Hastings.....		2.00		
A. H. Gruenhagen, Norwood.....			1.00	
Mammoth clover seed—				
C. H. Murphy, Caledonia.....	3.00			.
Mammoth clover bundles—				
C. H. Murphy, Caledonia.....		1.00		
Chas. C. Gray, Rochester.....			.50	
Alsike clover seed—				
Chas. C. Gray, Rochester.....	3.00			
R. C. Keel, Rochester.....		2.00		
L. V. Crandall, Red Wing.....			1.00	
Alsike clover in bundles—				
C. H. Murphy, Caledonia.....	2.00			
Chas. C. Gray, Rochester.....		1.00		
Louis Anderson, Rochester.....			.50	
Any other variety clover seed—				
Chas. C. Gray, Rochester.....	2.00			
C. H. Murphy, Caledonia.....		1.00		
Field peas, white—				
Chas. Krause, Rosetown.....	2.00			
C. H. Murphy, Caledonia.....		1.00		
Arthur Cooper, St. Cloud.....			.50	
Field peas, blue—				
Arthur Cooper, St. Cloud.....	2.00			
C. E. Murphy, Caledonia.....		1.00		
Chas. C. Gray, Rochester.....			.50	
Field peas, Marrowfat—				
C. H. Murphy, Caledonia.....	2.00			
Chas. C. Gray, Rochester.....		1.00		
C. E. Murphy, Caledonia.....			.50	
Sorghum, any named variety seeds—				
Chas. C. Gray, Rochester.....	2.00			
Sorghum, any named variety (10 stalks)—				
George Poor, Hastings.....	2.00			
L. V. Crandall, Red Wing.....		1.00		
John P. Murphy, Caledonia.....			.50	

CLASS 73—COUNTY EXHIBITS.

Points.		Olmsted Co.	Blue Earth Co.	Houston Co.	Morrison Co.	Goodhue Co.	Stearns Co.	Itasca Co.
200	Grains, 10 varieties.....	141.4	155.	147.2	138.	130.6	131.4	105.
200	Grains in sheaf, 10 varieties..	170.	160.	180.	175.	145.	140.	156.
100	Native Grasses	90.	95.	80.	85.	82.	75.	80.
100	Tame Grasses	75.	70.	60.	75.	73.	65.	80.
100	Millet, Rape, etc.....	70.	85.	65.	50.	75.	60.	60.
100	Potatoes, 10 varieties	96.	98.	94.	96.	98.	98.	96.
100	Stock Vegetables	100.	95.	95.	95.	95.	90.	95.
100	Culinary Vegetables	100.	83.	89.	92.	85.	84.	80.
100	Fresh Fruits	93.	68.	82.	71.	67.	61.	8.
50	Miscellaneous	50.	50.	50.	46.	47.	46.	46.
50	Arrangement	49%	46%	46½%	49%	40%	43%	45%
	Total Percentage	105.5	1,005.6	988.5	972.3	938.2	896.7	851.3
	Money Awarded	\$188.74	\$179.91	\$176.85	\$173.95	\$167.84	\$160.41	\$152.30
	Special Premiums...H. S . A. .	\$200.00 60.00	\$150.00 50.00	\$100.00 50.00	\$75.00 20.00	\$50.00 40.00	\$25.00	\$30.00
	Total Award	\$448.74	\$329.91	\$326.85	\$268.95	\$257.84	\$185.41	\$182.30
	Grade	1	2	3	4	5	6	7

CLASS 74—FARM EXHIBITS.

Points.		George Poor, Hastings, Minn.	L. V. Crandall, Red Wing, Minn.	A. R. Crandall Red Wing, Minn.	Marion DeVitt, Hammond, Minn.	J. W. Beckman, Cokato, Minn.	J. A. Howard, Hammond, Minn.	C. H. Murphy, Caledonia, Minn.
200	Grains, 10 varieties	159.6	152.2	153.2	146.	142.2	141.2	114.
200	Grains in sheaf, 10 varieties..	180.	150.	154.	170.	90.	82.	90.
100	Native Grasses	65.	90.	85.	50.	75.	90.	90.
100	Tame Grasses	90.	85.	85.	.....	20.	.....	.....
100	Millet, Rape, etc.....	65.	85.	85.	70.	25.	70.	75.
100	Potatoes, 10 varieties.....	85.	75.	75.	75.	95.	70.	70.
100	Stock Vegetables	50.	75.	65.	76.	80.	75.	85.
100	Culinary Vegetables	85.	80.	80.	70.	70.	75.	75.
100	Fresh Fruits	17.	.....	.....	55.	76.	64.	9.
50	Miscellaneous	85.	50.	50.	50.	85.	40.	75.
50	Arrangement	41.	37.	36.	39.	35.	39.	38.
	Total Percentage	922.6	879.2	818.2	795.	783.2	746.2	721.
	Money Awarded	\$16.29	\$15.52	\$14.45	\$14.03	\$13.82	\$13.17	\$12.72
	Special Premiums	12.00	8.00	5.00	.....	.....	.....	.....
	Total Award	\$28.29	\$23.52	\$19.45	\$14.03	\$13.82	\$13.17	\$12.72
	Grade	1	2	3	4	5	6	7

CLASS 75.

For the Best Display, Market Gardeners' and Growers' Asso. in Minnesota.	
St. Paul 'Growers' Association.....	1st. \$150.00
Minneapolis Market Gardeners' Association.....	2nd. \$125.00

CLASS 76—MUSHROOMS.

(\$75.00 to be divided pro rata.)

Mushrooms—

Minn. Mycological Society, 608 Minneapolis.....	\$37.50
Mrs. Bascomb, 375 E. Grant, Minneapolis.....	11.50
Miss Rose Geisman, Merriam Park, R. F. D.....	9.50
Miss Lizzie Brown, 3010 So. 1st Ave., Minneapolis.....	7.60
Wyman and Edw. Prince, 428 So. 16th St., Minneapolis.....	4.30
Mrs. E. M. Walloff, 22 Sheridan Ave., Minneapolis.....	4.60

DIVISION K—WOMEN'S DEPARTMENT.

Premiums awarded \$696.00

Superintendent—B. F. Nelson, Minneapolis.

Assistant Superintendent—Mrs. M. L. Luther, Minneapolis.

CLASS 77.

	1st Prem.	2nd Prem.	3rd Prem.
Apron, fancy, white—			
Mrs. Phil. Schweitzer, St. Paul.....	\$2.00		
Mrs. T. W. Baker, Waunakee, Wis.....		1.50	
Buttonholes, made in 12 different materials—			
Mrs. F. P. Maries, St. Paul.....	1.50		
Clara Lux, St. Paul.....		1.00	
Cross-stitch, best in white cotton			
Maria Mitsch, St. Paul.....	2.00		
Gretchen Mitsch, St. Paul.....		1.00	
Cross-stitch, best in colors—			
Mrs. C. D. Penfield, St. Paul.....	2.00		
Gretchen Mitsch, St. Paul.....		1.00	
Crocheted shoulder cape—			
Anna Mitsch, St. Paul.....	2.00		
Mary Walker, Minneapolis.....		1.00	
Crocheted shoulder shawl—			
Mrs. Joe Haggatt, Bird Island.....	2.00		
Mrs. R. S. Holmes, Austin.....		1.00	
Crocheted table mats—			
Mrs. G. J. Mitsch, St. Paul.....	1.50		
Mary Walker, Minneapolis.....		1.00	
Crocheted doilies—			
Miss Aldridge, St. Paul.....	1.50		
Mary Walker, Minneapolis		1.00	
Crocheted lady's sweater—			
Irma Austin, Minneapolis	2.00		
Mrs. E. F. Woodcock, Minneapolis.....		1.00	

		1st Prem.	2nd Prem.	3rd Prem.
Crocheted lace, best display of 6 or more pieces—				
Mrs. W. R. Giesman, Minneapolis.....		1.50		
Mary Walker, Minneapolis.....			1.00	
Crocheted infants' bootees—				
Mrs. G. J. Mitsch, St. Paul.....		1.50		
Mrs. Sausen, St. Paul.....			1.00	
Crocheted infant's sacque—				
Mrs. T. W. Baker, Waunakee, Wis.....		2.00		
R. F. Clark, Hector.....			1.00	
Crocheted Afghan, wool—				
Mrs. Arthur Atkins, St. Paul.....		2.00		
Mrs. T. W. Baker, Waunakee, Wis.....			1.00	
Cushion, pin, best—				
Bessie Catlin, Minneapolis.....		2.00		
Mrs. M. Flegle, Minneapolis.....			1.00	
Corset cover, best hand made—				
Mrs. W. B. Jones, Minneapolis.....		2.00		
Mrs. A. C. Davis, Minneapolis.....			1.50	
Mrs. T. W. Bakers, Waunakee, Wis.....				1.00
Corset cover, handkerchief—				
Mrs. J. A. Schmitz, St. Paul.....		2.00		
Mrs. M. Flegle, Minneapolis.....			1.50	
Agnes M. Williams, St. Paul.....				1.00
Darning, best specimen on old garment—				
Maud Scharff, St. Paul.....		1.50		
Mrs. J. M. Scharff, St. Paul.....			1.00	
Darning, on hose—				
Mrs. F. P. Marles, St. Paul.....		1.50		
Maud Scharff, St. Paul.....			1.00	
Doll, best dressed by child under 15 years—				
Myrtle Callan, St. Paul.....		3.00		
Irma Kruger, St. Paul.....			2.00	
Gertrude Gove, St. Paul.....				1.00
Drawn work lunch cloth—				
Mrs. Jane West, St. Paul.....		3.00		
Bertha Turner, St. Paul.....			2.00	
Mrs. V. W. Johnson, St. Paul.....				1.00
Drawn work centerpiece—				
Mrs. R. S. Holmes, Austin.....		2.00		
Bertha Turner, St. Paul.....			1.00	
Drawn work doilies, one-half dozen—				
Mrs. R. S. Holmes, Austin.....		2.00		
Mrs. D. M. Jurgensen, St. Paul.....			1.00	
Embroidered lunch cloth—				
Mrs. C. D. Penfield, St. Paul.....		3.00		
Mrs. E. Murphy, Minneapolis.....			2.00	
Mrs. R. S. Holmes, Austin.....				1.00
Embroidered lunch cloth in roses—				
A. L. Erickson, St. Paul.....		2.00		
Edna Simonton, La Crosse, Wis.....			1.00	
Embroidered lunch cloth, natural or colored linen—				
Mrs. John Lux, St. Paul.....		3.00		
Mrs. M. J. Murphy, Minneapolis.....			2.00	
Embroidered centerpiece—				
Mr. Louie Glader, Minneapolis.....		3.00		
Jennie Arctander, Hamline			2.00	
Ethel Tallmadge, Hamline				1.00
Embroidered centerpiece in roses—				
Mrs. C. D. Penfield, St. Paul.....		2.00		
Mrs. F. P. Marles, St. Paul.....			1.00	

		1st Prem.	2nd Prem.	3rd Prem.
Embroidered centerpiece in colored linen—				
Cornelia Newman, Minneapolis.....	2.00		1.00	
J. A. Redman, Minneapolis.....				
Embroidered centerpiece, natural or colored linen, in roses—				
Miss Lizzie Sweiitgart, Minneapolis.....	2.00			
Mrs. H. F. Medin, Minneapolis.....			1.00	
Embroidered doilies, half dozen—				
Mrs. R. S. Holmes, Austin.....	2.00			
Mrs. L. S. Wensole, La Crosse, Wis.....			1.00	
Embroidered initial on any material—				
Edna Simonton, La Crosse, Wis.....	2.00			
Mrs. C. Roal, Minneapolis.....			1.00	
Embroidered shirt waist, cotton or linen—				
Mrs. W. B. Jones, Minneapolis.....	3.00		2.00	
Mrs. O. P. Nelson, Minneapolis.....				
Mrs. E. Murphy, Minneapolis.....				1.00
Embroidery, solid cotton—				
Anna Roos, Minneapolis.....	2.00			
Mrs. W. J. Murray, Minneapolis.....			1.00	
Embroidery, solid linen—				
Anna Roos, Minneapolis	2.00			
Miss L. W. Stoddard, Minneapolis.....			1.00	
Embroidery, Mount-mellick, best lunch cloth—				
W. H. Bauford, Chicago, Ill.....	3.00			
Mrs. A. R. Essene, Minneapolis.....			2.00	
Lizzie Malzahn, Fairmont				1.00
Embroidery, Mount-mellick, best centerpiece—				
Mrs. R. S. Holmes, Austin.....	2.00			
Mrs. C. Bradgeman, Minneapolis.....			1.00	
Embroidery, Hardanger, or Norwegian, best lunch cloth—				
Mrs. L. K. Fisher, St. Paul.....	2.00			
Mrs. O. P. Nelson, Minneapolis.....			1.00	
Embroidery, Hardanger, or Norwegian, best centerpiece—				
Anna Gordon, Minneapolis.....	2.00			
Miss Rosie Hofbauer, St. Paul.....			1.00	
Embroidery, Hardanger, or Norwegian, best doilies or mats, one-half dozen—				
Mrs. Olie Herman, St. Paul.....	2.00			
Embroidery, Hardanger, or Norwegian, best dresser or side-board cover—				
Mrs. W. B. Kline, Minneapolis.....	2.00			
Mrs. H. Rognas, Minneapolis.....			1.00	
Embroidery, best specimen eyelet embroidery—				
Mrs. W. B. Jones, Minneapolis.....	2.00			
Mrs. M. Mackeplang, Minneapolis.....			1.00	
Embroidery, best specimen eyelet embroidery shirt waist—				
Mrs. E. Murphy, Minneapolis.....	2.00			
Irma Austin, Minneapolis.....			1.00	
Embroidery, best specimen, Hedabo—				
Lizzie Sweiitgart, Minneapolis.....	2.00			
Anna Jakobson, Tyler			1.00	
Embroidery, best specimen, shadow—				
Mrs. R. S. Holmes, Austin.....	2.00			
Mrs. Charlie Babcock, St. Paul.....			1.00	
Embroidery, silk, not classed above—				
Anna Roos, Minneapolis.....	2.00			
Mrs. J. Ream, St. Paul.....			1.00	
Embroidery, by lady over 70 years—				
Mrs. Anna Woodcock, Minneapolis.....	3.00			
Mrs. M. E. Bovee, Minneapolis.....			2.00	
Mrs. Anna Woodcock, Minneapolis.....				1.00

		1st Prem.	2nd Prem.	3rd Prem.
Embroidery, by girl under 15 years—				
Minna Voight, St. Paul.....	2.00			
Josephine Peterson, St. Paul.....		1.00		
Dorethy Rogers, Minneapolis.....			.50	
Handkerchief, point lace—				
Lizzie Malzahn, Fairmont.....	3.00			
Mrs. A. Bjorkquist, Minneapolis.....		2.00		
Mrs. A. Bjorkquist, Minneapolis.....			1.00	
Handkerchief, Honiton lace—				
Mrs. F. Schroeder, St. Paul.....	3.00			
Mrs. R. S. Holmes, Austin.....		2.00		
Mrs. M. Flegle, Minneapolis.....			1.00	
Handkerchief, hand made, fancy—				
Miss Neiman, St. Paul.....	2.00			
Miss A. B. Lawrence, Minneapolis.....		1.00		
Handkerchief, hand made, tatting—				
Mrs. A. E. Millgrem, St. Paul.....	2.00			
Mrs. D. M. Jurgensen, St. Paul.....		1.00		
Handkerchief, best collection, four or more—				
Lizzie Malzahn, Fairmont.....	3.00			
Miss Neiman, St. Paul.....		2.00		
Mrs. M. Flegle, Minneapolis.....			1.00	
Hemstitching, best specimen—				
Mrs. F. P. Marles, St. Paul.....	1.00			
Mrs. Winn Powers, St. Paul.....		.50		
Hand painted china, cream pitcher and sugar bowl—				
Miss M. Etta Beede, Minneapolis.....	2.50			
Miss M. Cameron, Minneapolis.....		1.50		
Hand painted china jardiniere—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Mrs. C. J. Thompson, St. Paul.....		2.00		
Mrs. Frank Clark, St. Paul.....			1.00	
Hand painted china punch bowl—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Mrs. A. Pierre, St. Paul.....			1.00	
Hand painted china tankard—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Miss M. Cameron, Minneapolis.....		2.00		
Miss Mary Cosgrove, St. Paul.....			1.00	
Hand painted china after-dinner coffee set—				
Miss Etta M. Beede, Minneapolis.....	3.00			
Hand painted china stein—				
Miss F. E. Newman, Minneapolis.....	3.00			
Miss M. Etta Beede, Minneapolis.....		2.00		
Miss F. E. Newman, Minneapolis.....			1.00	
Hand painted buttons, set of 6 or more—				
Mrs. P. Baldwin, Minneapolis.....	2.00			
Miss M. Cameron, Minneapolis.....		1.00		
Hand painted china vase—				
Miss M. Cameron, Minneapolis.....	3.00			
Miss F. E. Newman, Minneapolis.....		2.00		
Miss F. E. Newman, Minneapolis.....			1.00	
Hand painted china salad bowl—				
Miss F. E. Newman, Minneapolis.....	3.00			
Miss F. E. Newman, Minneapolis.....		2.00		
Miss M. Etta Beede, Minneapolis.....			1.00	
Hand painted china plate—				
Miss F. E. Newman, Minneapolis.....	2.00			
Miss F. E. Newman, Minneapolis.....		1.00		

		1st Prem.	2nd Prem.	3rd Prem.
Hand painted figure or head—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Hand painted china plate, conventional design—				
Miss M. Etta Beede, Minneapolis.....	2.00			
Miss F. E. Newman, Minneapolis.....		1.00		
Hand painted china cup and saucer, conventional design—				
Miss F. E. Newman, Minneapolis.....	2.00			
Mrs. E. F. Woodcock, Minneapolis.....		1.00		
Hand painted china vase, conventional design—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Miss F. E. Newman, Minneapolis.....		2.00		
Hand painted china vase in luster work—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Mrs. P. Baldwin, Minneapolis.....		2.00		
Hand painted china, best article in luster work—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Mrs. P. Baldwin, Minneapolis.....		2.00		
Hand painted china, article not named—				
Miss F. E. Newman, Minneapolis.....	3.00			
Miss M. Cameron, Minneapolis.....		2.00		
Hand painted china, best collection, amateur—				
Miss Adelaide Sayer, Minneapolis.....	8.00			
Mrs. C. J. Thompson, St. Paul.....		5.00		
Pauline Bahr, Minneapolis.....				3.00
Hand painted china, best collection, professional—				
Miss M. Etta Beede, Minneapolis.....	10.00			
Miss F. E. Newman, Minneapolis.....		8.00		
Hand painted china, best specimen conventional design—				
Miss M. Etta Beede, Minneapolis.....	3.00			
Miss F. E. Newman, Minneapolis.....		2.00		
Infant's hood, lace—				
Mrs. Cremer, Minneapolis.....	2.00			
Agnes Grinsted, Minneapolis.....		1.00		
Infants hood, wool—				
Edna Simonton, La Crosse, Wis.....	2.00			
Infant's dress, long—				
Mrs. J. A. Schmitz, St. Paul.....	2.00			
Mrs. F. W. Kruse, Minneapolis.....		1.00		
Infant's dress, short—				
Miss E. Neiman, St. Paul.....	2.00			
Mrs. J. Birch, St. Paul.....		1.00		
Lace, Battenberg curtains—				
Mrs. F. Schroeder, St. Paul.....	3.00			
Mrs. Phil. Schweitzer, St. Paul.....		2.00		
Miss F. M. Bagley, St. Paul.....				1.00
Lace, Battenberg, centerpiece—				
Mrs. F. Dane, St. Paul.....	2.00			
Mrs. D. Levine, Minneapolis.....		1.00		
Lace, Battenberg, dresser cover—				
Mrs. R. S. Holmes, Austin.....	2.00			
Mrs. A. C. Wendell, Minneapolis.....		1.00		
Lace, Battenberg, lunch cloth—				
Mrs. D. Levine, Minneapolis.....	3.00			
Mamie F. Williams, St. Paul.....		2.00		
Lace, Point, best specimen—				
Mrs. E. L. Williams, Lester Prairie.....	2.00			
Mrs. E. C. Torrey, Minneapolis.....		1.00		
Lace, Honiton, best specimen—				
Mrs. J. A. Schmitz, St. Paul.....	2.00			
Mrs. M. Flegle, Minneapolis.....		1.00		

		1st Prem.	2nd Prem.	3rd Prem.
Lace, hand made collar—				
Mrs. E. L. Williams, Lester Prairie.....	2.00			
Mrs. F. Woehmug, Minneapolis.....		1.00		
Lace, hand made bertha—				
Mrs. B. L. Barnes, Minneapolis.....	2.00			
Mrs. B. J. Bamford, St. Paul.....		1.00		
Lace, best specimen—				
Mrs. T. C. Hopkins, St. Paul.....	2.00			
Mrs. E. L. Williams, Lester Prairie.....		1.00		
Lace, best specimen, by lady over 60 years—				
Mrs. B. L. Barnes, Minneapolis.....	2.00			
Mrs. Jane West, St. Paul.....		1.00		
Mrs. F. J. Paine, St. Paul.....			.50	
Lace, knitted, best display of 6 or more pieces—				
Mrs. M. Ewald, Minneapolis.....	2.00			
Mrs. Ickler, St. Paul.....		1.00		
Lace, Irish chonet—				
Mrs. Agnes Smith, Minneapolis.....		2.00		
Mitten, silk, knitted—				
Mrs. T. W. Baker, Waunakee, Wis.....	2.00			
Mrs. G. Mitsch, St. Paul.....		1.00		
Mittens, wool, knitted—				
Mrs. T. W. Baker, Waunakee, Wis.....	2.00			
Mrs. G. Mitsch, St. Paul.....		1.00		
Netting, best specimen—				
Mrs. J. F. Malone, Owatonna.....	2.00			
Mrs. Alfred Jury, Bird Island.....		1.00		
Netting, best doily or mat—				
J. E. Malone, Owatonna.....	2.00			
Mrs. W. A. Laidlow, Merriam Park.....		1.00		
Patching on old garment—				
Mrs. F. P. Marles, St. Paul.....	2.00			
Maud Scharff, St. Paul.....		1.00		
Pillow, sofa, embroidered—				
Albertine Banngart, Gluco.....	3.00			
Mrs. J. Birch, St. Paul.....		2.00		
Mrs. Olie Herman, St. Paul.....			1.00	
Pillow, sofa, embroidered in roses—				
J. R. Kierski, St. Paul.....	3.00			
Mrs. N. Schroeder, Minneapolis.....		2.00		
Pillow, sofa, huckaback—				
Helen Drew, St. Anthony Park.....	3.00			
Helen Drew, St. Anthony Park.....		2.00		
R. F. Clark, Hector.....			1.00	
Pillow, sofa, fancy—				
Mrs. Pauline Nauer, Minneapolis.....	3.00			
Mrs. J. H. Bone, Minneapolis.....		2.00		
Nellie Jones, St. Paul.....			1.00	
Pillow, sofa, cross-stitch embroidery—				
Gretchen Mitsch, St. Paul.....	3.00			
Mrs. W. C. Farrington, Minneapolis.....		2.00		
Edna Simonton, La Crosse, Wis.....			1.00	
Pillow, sofa, leather—				
Mrs. M. R. Kotnom, St. Paul.....	3.00			
E. D. Fuller, Minneapolis.....		2.00		
Fred C. Smith, St. Paul.....			1.00	
Pillow, sofa, embroidered—				
Heilmar Oleson, Minneapolis.....	3.00			
Pillow, Infant's—				
Mrs. M. Flegle, Minneapolis.....	2.00			
Mrs. J. A. Redman, Minneapolis.....		1.00		

		1st Prem.	2nd Prem.	3rd Prem.
Quilt, crazy, silk—				
Mrs. E. A. Case, St. Paul.....	3.00			
A. E. Easton, Minneapolis.....		2.00		
Mrs. Ella Adams, St. Paul.....			1.00	
Quilt, crazy, wool—				
Mrs. Alfred Jury, Bird Island.....	2.00			
Mrs. Mary Flaten, Granite Falls.....			1.00	
Quilt, velvet or plush—				
Mrs. Adams, West St. Paul.....	2.00			
Quilt, log-cabin, silk—				
Mrs. M. Sexton, Minneapolis.....	3.00			
Mrs. Agnes Bussiere, St. Paul.....			1.50	
Quilt, log-cabin, wool—				
Mrs. G. W. Boyden, St. Paul.....	2.00			
Mrs. Icklet, St. Paul.....			1.00	
Quilt, block, silk—				
Mrs. S. J. Bowler, Minneapolis.....	3.00			
Mrs. Chas. Simpson, Minneapolis.....		2.00		
Mrs. M. E. Fladwed, Lake City.....			1.00	
Quilt, block, wool—				
Mrs. G. C. King, Elk River.....	2.00			
Quilt, patchwork, cotton—				
Mrs. Reynolds, St. Paul.....	2.00			
Julia Shepard, St. Paul.....			1.00	
Quilt, silk, made by lady over 70 years of age—				
Mrs. Jane West, St. Paul.....	3.00			
Mrs. Brown, St. Paul.....		2.00		
Josephine Bentley, Rushford.....			1.00	
Quilt, wool, made by lady over 70 years of age—				
Mrs. N. B. Wheeler, St. Paul.....	3.00			
Mary Cook, Kellogg.....		2.00		
Mrs. A. Swanson, Minneapolis.....			1.00	
Quilt, patchwork, made by lady over 70 years of age—				
Mrs. Max Dawson, St. Paul.....	2.00			
Mrs. M. Flegle, Minneapolis.....			1.00	
Reticule, or fancy bag, silk—				
Lillian Drake, Rich Valley.....	2.00			
Bessie Catlin, Minneapolis.....			1.00	
Rug, hand made, drawn—				
Margaret Gentgen, Shakopee.....	2.00			
Mrs. Alfred Jury, Bird Island.....			1.00	
Rug, hand made—				
Mrs. Abbie Whitcomb, Minneapolis.....	2.00			
A. E. Easton, Minneapolis.....			1.00	
Sacque, lady's fancy dressing—				
Miss Lanprey, St. Paul.....	2.00			
Mrs. Phil Schweitzer, St. Paul.....			1.00	
Slippers, knitted—				
Mrs. R. S. Holmes, Austin.....	2.00			
Edna Simonton, La Crosse, Wis.....			1.00	
Slippers, crocheted—				
Anna Mitsch, St. Paul.....	2.00			
Mrs. E. Converse, St. Louis, Mo.....			1.00	
Stocking bag—				
Edna Simonton, La Crosse, Wis.....	2.00			
R. F. Clark, Hector.....			1.00	
Stocking, wool-knitted—				
Mrs. Geo. Mitsch, St. Paul.....	2.00			
Mrs. T. W. Baker, Waunakee, Wis.....			1.00	

	1st Prem.	2nd Prem.	3rd Prem.
Socks, wool, knitted—			
Mrs. H. Broadbent, St. Paul.....	2.00		
Mrs. R. F. Roberts, St. Paul.....		1.00	
Underclothes, lady's best set, 3 pieces—			
Mrs. F. H. Murray, St. Paul.....	3.00		
Articles of fancy work not enumerated above—			
Wm. Treager, Minneapolis.....	3.00		
Mrs. V. Gardner, Minneapolis.....		2.00	
Tapestry painting—			
Mrs. J. H. Hague, Minneapolis.....	4.00		
Mrs. Wm. Pankonim, Stillwater.....		3.00	
Mrs. J. H. Hague, Minneapolis.....			2.00
Bead work—			
Mrs. R. S. Holmes, Austin.....	3.00		
Lydia Heinhardt, St. Paul.....		2.00	
Eva Austin, Minneapolis.....			1.00
Burnt wood, box or chest—			
Mabel E. Gross, St. Paul.....	3.00		
A. Anderson, Minneapolis.....		2.00	
Mrs. Ida Townsend, Minneapolis.....			1.00
Burnt wood panel or plaque—			
Mabel E. Gross, St. Paul.....	2.00		
G. M. Brockett, Minneapolis.....		1.00	
Burnt wood frame—			
Mrs. Ida Townsend, Minneapolis.....	2.00		
R. F. Clark, Hector.....		1.00	
Burnt wood tabourette—			
Mrs. Ida Townsend, Minneapolis.....	2.00		
Louie Glader, Minneapolis.....		1.00	
Burnt wood article not enumerated above—			
Mabel E. Gross, St. Paul.....	3.00		

EDUCATIONAL WORK

Open to the Schools of Minnesota.

Primary hand work, including paper work, weaving, etc.

Best exhibit—

Minneapolis public schools.....	\$15.00	
St. Paul public schools.....		\$10.00
Faribault school for feeble-minded.....		\$8.00

Intermediate hand work, basketry, pottery, etc. Best exhibit—

St. Paul public schools.....	15.00	
Minneapolis public schools.....		10.00
Faribault school for feeble-minded.....		8.00

Grammar grade, hand work, manual training, leather work—

St. Paul public schools.....	15.00	
Minneapolis public schools.....		10.00

High school, manual training, cabinet work, wood turning, sheet metal work, vise work, machine work in iron—

St. Paul high schools.....	15.00	
Minneapolis high schools.....		10.00

Drawing, eighth grade work—

Minneapolis public schools.....	15.00	
St. Paul public schools.....		10.00

Drawing, high school work, free-hand mechanical—

Minneapolis high schools.....	15.00	
St. Paul high schools.....		10.00
Faribault high school.....		8.00

CLASS 78.

	1st Prem.	2nd Prem.	3rd Prem.
Bread, white—			
Mrs. C. W. Altenberg, St. Paul.....	2.00		
Mrs. S. R. Spates, Wayzata		1.00	
Bread, white, wheat—			
Mrs. C. W. Altenberg, St. Paul.....	2.00		
Mrs. E. Barrett, Merriam Park		1.00	
Cake, chocolate, stirred in—			
Isabel A. Tisdale, St. Paul	2.00		
Mrs. C. W. Altenberg, St. Paul		1.00	
Cake, white—			
Gertle Semf, St. Paul	2.00		
Mrs. A. G. Ruggles, St. Paul		1.00	
Cake, angel—			
Mrs. A. G. Ruggles, St. Paul	2.00		
J. O. Lunger, St. Paul		1.00	
Cake, pound—			
Mrs. Paul Krueger, St. Paul	2.00		
Cake, fruit—			
Mrs. A. T. French, New Brighton	2.00		
G. T. Houseman, Fairmont		1.00	
Cake, gold—			
Mrs. A. G. Ruggles, St. Paul	2.00		
J. O. Lunger, St. Paul		1.00	
Cake, sponge—			
Mrs. A. G. Ruggles, St. Paul	2.00		
Mrs. W. A. Alden, Minneapolis		1.00	
Cake, marble—			
Mrs. A. T French, New Brighton	2.00		
Mrs. J. F. Fairfax, Minneapolis		1.00	
Cake, spice—			
Isabel A. Tisdale, St. Paul	2.00		
Mrs. P. Kruger, St. Paul		1.00	
Cake, nuts, stirred in—			
Mrs. A. G. Ruggles, St. Paul	2.00		
Marie Martins, Minneapolis		1.00	
Cookies, white—			
Mrs. M. Flegle, Minneapolis	2.00		
Amelia Frey, St. Paul		1.00	
Hermits—			
Mrs. E. Barrett, Merriam Park	2.00		
Mrs. A. T. French, New Brighton		1.00	
Doughnuts—			
Mrs. E. Barrett, Merriam Park	2.00		
Miss Darby, St. Paul		1.00	
Tea Rolls—			
Mrs. W. T. Whitney, Minneapolis	2.00		
Mrs. S. R. Spates, Wayzata		1.00	
Baking Powder Biscuits—			
Mrs. W. A. Alden, Minneapolis	2.00		
Mrs. E. Barrett, Merriam Park		1.00	
Blackberries, 1 pint—			
Mary Moeser, St. Louis Park		1.00	
Blueberries, 1 pint—			
Mrs. J. F. Fairfax, Minneapolis		1.00	
Crabapples, 1 pint—			
Mrs. S. R. Spates, Wayzata	1.00		
Rosa B. Giesmann, Merriam Park .....		.50	

		1st Prem.	2nd Prem.	3rd Prem.
Gooseberries, 1 pint—				
Mrs. S. R. Spates, Wayzata	1.00			
Peaches, 1 pint—				
Mary Moeser, St. Louis Park	1.00			.50
Mrs. S. R. Spates, Wayzata .....				.50
Pears, 1 pint—				
Mary Moeser, St. Louis Park	1.00			
Mrs. O. Hamrey, St. Paul .....				.50
Raspberries, 1 pint—				
Mrs. S. R. Spates, Wayzata	1.00			
Mrs. M. Flegle, Minneapolis.....				.50
Sand cherries, 1 pint—				
Mrs. S. R. Spates, Wayzata	1.00			
Mrs. John Gantzer, St. Paul .....				.50
Cherries, 1 pint—				
Mrs. J. F. Fairfax, Minneapolis	1.00			
Miss E. Zimmerman, St. Paul .....				.50
Strawberries, 1 pint—				
Mary E. Van Arsdale, St. Paul.....	1.00			
Mrs. S. R. Spates, Wayzata .....				.50
Jam, blackberry—				
Mrs. M. Flegle, Minneapolis	1.00			
Jam, currant—				
Mrs. M. Flegle, Minneapolis	1.00			
Mrs. De Mitt Ruff, St. Paul .....				.50
Jam, currant and raspberry—				
Mrs. Eddy, Minneapolis	1.00			
Mrs. M. Flegle, Minneapolis .....				.50
Jam, gooseberry—				
Mrs. John Gantzer, St. Paul .....				.50
Jam, raspberry—				
Mary Moeser, St. Louis Park	1.00			
Mrs. Eddy, Minneapolis .....				.50
Jam, strawberry—				
Mrs. J. H. Zimmermann, St. Paul	1.00			
Mrs. C. H. Schulz, St. Paul.....				.50
Jelly, crabapples, $\frac{1}{2}$ pint glass—				
Mrs. M. Flegle, Minneapolis	1.00			
Mrs. Eddy, Minneapolis .....				.50
Jelly, red currant, $\frac{1}{2}$ pint glass—				
Mrs. De Mitt Ruff, St. Paul	1.00			
Mrs. S. R. Spates, Wayzata .....				.50
Jelly, grape, red, $\frac{1}{2}$ pint glass—				
Mrs. J. A. Thompson, Minneapolis	1.00			
Clara Lux, St. Paul .....				.50
Jelly, gooseberry, $\frac{1}{2}$ pint glass—				
Mrs. M. Flegle, Minneapolis	1.00			
Mary Moeser, St. Louis Park .....				.50
Jelly, plum, $\frac{1}{2}$ pint glass—				
Mrs. M. Flegle, Minneapolis	1.00			
Mrs. Sarah Gordon, St. Paul.....				.50
Jelly, raspberry and currant—				
Mrs. M. Flegle, Minneapolis	1.00			
Mary Moeser, St. Louis Park .....				.50
Chili Sauce, 1 quart—				
Rosa B. Giesmann, Merriam Park	1.00			
Catsup, tomato, 1 quart—				
Mrs. M. Flegle, Minneapolis.....	1.00			

		1st Prem.	2nd Prem.	3rd Prem.
Pickles, sour, 1 quart—				
Mrs. S. R. Spates, Wayzata	1.00			
Luella Kuceman, St. Paul .....		.50		
Pickles, salad or oil, 1 quart—				
Mary Moeser, St. Louis Park	1.00			
Miss A. E. Hoffman, St. Paul.....		.50		
Pickles, mixed, 1 quart—				
Mary Moeser, St. Louis Park	1.00			
Elsie Campbell, St. Paul .....		.50		
Pickles, onion, 1 quart—				
Mrs. S. R. Spates, Wayzata	1.00			
Mrs. O. Hamrey, St. Paul .....		.50		
Pickles, crabapple, sweet, 1 quart—				
Mrs. S. R. Spates, Wayzata	1.00			
Mary Moeser, St. Louis Park .....		.50		
Pickles, peach, sweet, 1 quart—				
Mary Moeser, St. Louis Park	1.00			
Pickles, watermelon, sweet, 1 quart—				
Mrs. M. Flegle, Minneapolis .....		.50		
Mrs. M. Flegle, Minneapolis.....	1.00			
Spiced currants, 1 quart—				
Mrs. E. Barrett, Merriam Park	1.00			
Mrs. M. Flegle, Minneapolis .....		.50		
Spiced plums, 1 quart—				
Mrs. M. Flegle, iMnneapolis	1.00			
Home made cream candy, 1 pound—				
Clara and Mamie Devinny, St. Paul	1.00			
M. C. Hunter, St. Paul .....		.50		
Home made taffy candy, 1 pound—				
Mrs. A. T. French, New Brighton	1.00			
Irma Martins, Minneapolis .....		.50		
Home made nut candy, 1 pound—				
Irma Krueger, St. Paul	1.00			
Clara and Mamie Devinny, St. Paul.....		.50		
Pie, apple—				
Mrs. John Kennedy, St. Paul	1.00			
Emma Semf, St. Paul .....		.50		
Pie, cherry—				
Emma Self, St. Paul.....	1.00			
Pie, lemon—				
Mrs. G. M. Bailey, St. Paul	1.00			
Mrs. J. A. Redman, Minneapolis .....		.50		
Pie, pumpkin—				
Carrie Odell, Minneapolis	1.00			

SPECIAL CAKE PREMIUM OFFERED BY J. H. ALLEN & CO.

Any kind of cake in which our ROBIN BRAND BAKING POWDER shall be the baking powder used, and in which our DAINTY AND ROBIN BRAND EXTRACTS shall be the flavorings used.

	1st. Prem.	2nd. Prem.	3rd. Prem.
Marie Martens, Minneapolis.....	\$15.00		
Mrs. A. M. Dyer, St. Paul.....		10.00	
Mrs. A. G. Ruggles, St. Paul			5.00

**REPORT OF THE SUPERINTENDENT OF THE MAIN EX-
POSITION BUILDING.**

B. F. Nelson, Minneapolis, Superintendent.

W. J. Jones, Minneapolis, Assist. Superintendent.

To the Honorable Members of the Board of Managers of the Minnesota State Agricultural Society:

It is my pleasure, as Superintendent of the Main Building, to make the following report: As far as this exhibit was concerned, the fair of 1906 was a great success. Special effort was shown on the part of most exhibitors, to enlarge their exhibits and make them more attractive than ever before. During the entire week the building was well filled with visitors, day and night enjoying the attractive exhibits, as well as the handsomely decorated and brilliantly lighted building. Many desiring to exhibit in this building were compelled to accept accommodations in a portion of the Woman's Building while others made an exhibit in tents outside, thus demonstrating that the Main Building is not equal to the demands. Considerable revenue was cut off by being unable to accommodate many desiring concessions in the building.

The following is list of exhibitors:

State Dairy & Food Commission,
M. Townsley & Son, St. Paul.
T. L. Blood & Company, St. Paul.
Zenith Furnace Company, Duluth.
Twin City Telephone Co., Minneapolis & St. Paul.
Powers Mercantile Co., Minneapolis.
Matheis Furniture Co., St. Paul.
Salsbury & Saterlee, Minneapolis.
American Music Pub. Co., St. Paul.
L. F. Dow Co., St. Paul.
E. R. Williams, Minneapolis.
Schuneman & Evans, St. Paul.
Vought Berger Co., La Crosse.
Foster Robe & T. Co., Minneapolis.
Seeger Gallasch R. Co., St. Paul.
Hardwood Door Company, St. Paul.
Anton Schroeder, St. Paul.
C. F. Blanke T. & C. Co., Minneapolis.
Mpls. Carpet Cl. & Rug Co., Minneapolis.
Gruenhagen & Francis Co., St. Paul.
J. Byron Bushnell, St. Paul.
W. J. Dyer & Bro., St. Paul.
Mannheimer Bros., St. Paul.

Dayton Dry Goods Co., Minneapolis.
Strand Youngquist Mfg. Co., Minneapolis.
W. K. Morison & Company, Minneapolis.
E. Sundkvist & Company, St. Paul.
American Sec. Furniture Co., Minneapolis.
Wm. Donaldson & Co., Minneapolis.
Nippon Art Company, St. Paul.
Mpls. Dry Goods Co., Minneapolis.
Union Match Company, Duluth.
Swift & Company, So. St. Paul.
Kempien & Womack, St. Paul.

B. F. NELSON.

DEPARTMENT OF MANUFACTURES AND FARM IMPLEMENTS.

To the Board of Managers Minnesota State Fair.

Gentlemen: I beg to submit the following report of the department of manufactures, machinery and farm implements for the state fair held September 3 to 8, 1906.

The number of exhibitors and the character of the exhibits in this department were fully up to those of former years, in some lines the exhibits excelled those of any former fair both in quality and extent. The character of the exhibits in The Minnesota Manufacturers Building continue to be disappointing, the building was filled but the exhibits were not representative of the manufacturing industries of the state. The carriage buildings were very much over-crowded and the need for more room for this line of exhibits is pressing, we need at least one large substantial building for high grade carriages and hearses and it should be provided for at an early date so that exhibitors will know they will have room for this class of exhibits and prepare accordingly. New buildings were erected on the grounds this year by The International Harvester Company, and by the Minneapolis Steel and Machinery Company, both of these buildings are of a substantial and satisfactory character. Arrangements have been made with The Estate of P. D. Beckwith, manufacturers of stoves, to put up a very good building for their exhibit and negotiations are in progress with other exhibitors looking to the erection of several substantial buildings on the fair grounds the coming year. The putting up of good buildings by leading exhibitors indicates the value they attach to this class of advertising and is an expression of their confidence in the permanency of the Minnesota State Fair. Below will be found a list of the exhibitors with the postoffice address of each.

Respectfully submitted,
WM. E. LEE,
Superintendent.

EXHIBITORS IN MACHINERY DEPT. MINN. STATE FAIR 1906.

Twin City Brick Co., St. Paul.
Woodmansee Wind Mill Co., Decorah, Iowa.
J. I. Case Threshing Machine Co., Minneapolis.
Cyclone Woven Wire Fence Co., Waukegan, Ill.
Mason City Brick and Tile Co., Mason City, Iowa.
Fosston Mfg. Co., Merriam Park, Minn.
Northwestern Lime Co., St. Paul.
Wagner Motor Cycle Co., St. Paul.
Northwestern Thresher Co., Stillwater, Minn.
Chas. A. Stickney Co., St. Paul.
Waterbury Implement Co., Mpls.
R. S. Caward, Cresco, Iowa.
Foster Implement Co., St. Paul.
Olson & Becker, St. Paul.
Mpls. Furniture Co., Minneapolis.
Olds Gas Engine Co., Minneapolis.
Puffer-Hubbard Mfg. Co., Minneapolis.
A. S. Riley, Pardeeville, Wis.
Fairbanks, Morse & Co., St. Paul.
Enterprise Machine Co., Minneapolis.
Smith & Zimmer, Minneapolis.
Colliens Plow Co., Minneapolis.
Glencoe Foundry & Machine Co., Glencoe, Minn.
Bradley, Clarke & Co., Minneapolis.
The Austin Western Co., St. Paul.
Valentine Bros., Minneapolis.
Smith Mfg. Co., Chicago, Ill.
Kinnard Haines Mfg. Co., Minneapolis.
Robert T. Bates, Minneapolis.
J. L. Owens & Co., Minneapolis.
A. D. Baker & Co., Swanton, Ohio.
Peter Faber, St. Paul.
Parsons Band Cutter & Self Feeder Mfg. Co., Minneapolis.
J. P. A. Anderson & Son Co., Madrid, Iowa.
St. Cloud Seed and Grain Separator Co., St. Cloud, Minn.
J. C. Shadegg Engine Co., Minneapolis.
Sandwich Mfg. Co., Cedar Rapids, Iowa.
Brandt Bros. Mfg. Co., Chisago City, Minn.
Nordquist & Sons Co., Minneapolis.
Fruen Cereal Co., Mpls.
Minnesota Stove Co., Shakopee, Minn.
Welterstorff-Haskell Range & Furnace Co., St. Paul.
F. Buchstein Co., Minneapolis.
Minnesota Macaroni Co., St. Paul.
Kondon Mfg. Co., Mpls.
Twin City Granite Works, St. Paul.
Peterson Carpet Co., Mpls.
Gold Coin Stock Food Co., St. Paul.

Weisenborn Fence Machine Co., Mpls.
St. Paul Rug & Rag Carpet Co., St. Paul.
Roberts Heating & Ventilating Co., Mpls.
North American Novelty Co., Mpls.
St. Paul Roofing & Cornice Co., St. Paul.
Nels H. Nelson, Willmar, Minn.
K. C. Hay Press Mfg. Co., Mpls.
National Drill & Mfg. Co., Mpls.
Challenge Company, Minneapolis.
Fuller & Johnson, Mpls.
C. W. Russell, Mpls.
W. I. Brown, St. Paul.
Appleton Mfg. Co., Mpls.
Alma Mfg. Co., Mpls.
John Lawson Mfg. Co., New Holstein, Wis.
E. H. Donahugh, St. Paul.
M. H. Daley, Charles City, Iowa.
Pressed Stone Mfg. Co., St. Paul.
Huber Bros. Mfg. Co., Mpls.
Geiser Mfg. Co., Mpls.
J. L. Ware & Co., St. Paul.
C. Gotzian & Co., St. Paul.
Winona Wagon Co., Winona, Minn.
Deere & Webber Co., Mpls.
Sturtevant & Larabee, Binghamton, N. Y.
Mpls. Steel & Machinery Co., Mpls.
American Steel & Wire Co., Chicago, Ill.
Griggs, Cooper & Co., St. Paul.
L. B. Fish, St. Paul.
Froelich Mfg. Co., St. Paul.
Page Woven Wire Fence Co., Adrian, Mich.
Mpls. Plow Co., Mpls.
L. B. Tibbets & Son Carriage Co., Mpls.
Russell Grader Mfg. Co., Mpls.
Minneapolis Plow Co., Minneapolis.
International Harvester Co. of America, Mpls.
M. B. Anderson, Mpls.
W. E. Ashby Telephone Cut-out Co., Chariton, Iowa.
Hunt, Helm, Ferris Co., Harvard, Ill.
Buffalo Mfg. Co., Buffalo, Minn.
Fish Bros, Clinton, Iowa.
Gale Mfg. Co., Grinnell, Iowa.
H. B. Fuller, St. Paul.
Bovee Grinder & Furnace Works, Waterloo, Iowa
Minnesota Canneries Co., Mpls.
Swenson Grubber Co., Cresco, Iowa.
Milo White, Mpls.
Iowa Gate Co., Cedar Rapids, Iowa.
A. V. Cleland, Minneapolis.
Winona Carriage Co., Winona, Minn.
Thompson & Ege, St. Paul.
Geo. F. Thompson & Son, Minneapolis.

Parry Mfg. Co., Indianapolis, Ind.
Nolan & Layman, Mpls.
Northwestern Mfg. Co., Fort Atkinson, Wis.
Columbus Buggy Co., Mpls.
J. L. Clarke Carriage Co., Mpls.
Mpls. Implement Co., Mpls.
D. M. Sechler Carriage Co., Moline, Ill.
Downs & Morrison Mfg. Co., Mpls.
Van Brunt Mfg. Co., Horicon, Wis.
Thomas Mfg. Co., Springfield, Ohio.
Henry Smithson, Ortonville, Minn.
Mpls. Separator Co., Mpls.
Hudson & Thurber Co., Mpls.
Louden Machine Co., St. Paul.
Poirier Mfg. Co., Gladstone, Minn.
Law Mfg. Co., Merriam Park, Minn.
Moore Boat Works, Wayzata, Minn.
Ohio Cultivator Co., Mpls.
Lindsay Bros., Mpls.
Monitor Drill Co., Mpls.
Owatonna Mfg. Co., Owatonna, Minn.
Moline Pump Co., Moline, Ill.
John Peterson, St. Paul, Minn.
Waterous Engine Co., St. Paul.
Wood Bros Steel Self-Feeder Co., Des Moines, Iowa.
Hart Parr Mfg. Co., Charles City, Iowa.
American Gas Machine Co., Albert Lea, Minn.
Belle City Mfg. Co., Racine, Wis.
Janesville Machine Co., Mpls.
St. Paul Brick Co., St. Paul.
M. Rumley & Co., Mpls.
F. E. Myers & Bros., Ashland, Ohio.
State Highway Commission, St. Paul.
Moon Bros., Mpls.
Racine, Sattley Mfg. Co., Mpls.
Riddle Coach & Hearse Co., Mpls.
Barrett Mfg. Co., Chicago, Ill.
J. E. Porter Co., Oswana, Ill.
J. H. Allen & Co., St. Paul.
Twin City Separator Co., Mpls.
W. D. James Mfg. Co., Wales, Wis.
Minnesota Boat & Power Works, Stillwater, Minn.
H. F. Lennon, 190 Aurora Ave., Minneapolis, Minn.
Johnson & Field Mfg. Co., Racine, Wis.
Avery Mfg. Co., Minneapolis.
The Vehicle Apron & Hood Co., Columbus, Ohio.
Fish & Wilcox, St. Paul, Minn.
Northwestern Wind Engine Co., Minneapolis.
H. N. Randall, 208 3rd St. N., Minneapolis.
James T. Britt, Milwaukee, Wis.
International Stock Food Co., Minneapolis, Minn.
J. H. Restad & Son, 2730, 1st Ave So., Minneapolis.

Dahlman & Cooper Supply Co., Fond du Lac, Wis.
Marion Mfg. Co., Minneapolis, Minn.
Thomas & Smith Mfg. Co., Chicago, Ill.
E. M. Orton, Minneapolis, Minn.
T. M. Ort and Geo. Grebner, St. Paul, Minn.
Breyer Bros., Whitney & Co., Wampau, Wis.
Cement Tile & Machinery Co., Waterloo, Iowa.
American Window Screen Mfg. Co., St. Paul, Minn.
Dubitz & Melbrath, Lakefield, Minn.
Glessom Safety Wagon & Carriage Co., Stillwater, Minn.
B. F. Fowler, 1706 Plymouth Ave. N., Minneapolis, Minn.
Worlds Wonder Chainless Fence Mchny Co., Minneapolis, Minn.
Bartholomew Co., Peoria, Ill.
Winner Block Machine Co., Minneapolis.
Standard Oil Co., St. Paul, Minn.
Crane Ordway Co., St. Paul, Minn.
Faribault Machine Co., Faribault, Minn.
Advance Thresher Co., Minneapolis, Minn.
John A. Salzer Seed Co., La Crosse, Wis.
Wathena Washer Co., Wathena, Kan.
Sawyer Wheeled Scraper Co., Minneapolis.
G. A. Paddock, Beaver Dam, Wis.
Minnesota Linseed Oil Co., Minneapolis.
H. M. Samuels, Minneapolis.
C. W. Moe, Minneapolis.
Medium Hollow Block Machinery Co., Minneapolis.
Flour City Cement Block & Machinery Co., Minneapolis.
R. C. Andrews, Chatfield, Minn.
Weise & Kahlman, Lester Prairie, Minn.
Star Carriage & Buggy Oiler Co., Rockford, Ill.
P. N. Peterson Granite Co., St. Paul.
J. N. Smith & Co., Minneapolis.
Beaver Dam Mfg. Co., Beaver Dam, Wis.
Reuben Evener Works, Stillwater, Minn.
Ames Manfg. Co., Minneapolis.
J. D. Tower & Sons Co., Mendota, Ill.
Cammon Bros. & Co., Minneapolis.
Austin Weed Exterminator Co., Austin, Minn.
S. C. Paulson, Minneapolis.
Nutting Truck Co., Faribault, Minn.
American Spraying Machine Co., Chicago, Ill.
A. D. Baker & Co., Swanton, Ohio.
Corn Belt Mfg. Co., Waterloo, Iowa.
M. P. Martin, St. Louis Park, Minn.
R. D. Cody Co., Minneapolis.
C. J. Ensrud, Minneapolis.
I. Breckner, Browerville, Minn.
Paul Held, St. Cloud, Minn.
Strite Governor Pulley Co., St. Paul.
Gade Bros. Mfg. Co., Iowa Falls, Iowa.
Brenner Steel Wagon Co., Wapakeuta, Ohio.

C. H. Golden, Minneapolis.
W. G. McKrown, Tripola, Iowa.
Kenyston Couple Co., Hastings, Minn.
Beach Mfg. Co., Charlotte, Michigan.
O. G. Wilson, St. Paul.
Marshalltown Buggy Co., Marshalltown, Iowa.
Bruley Steel Fence Post Co., Milwaukee, Wis.
Minneapolis Threshing Machine Co., Minneapolis.
Pella Stacker Co., Pella, Iowa.
Lenox Machine Co., Minneapolis.
Pearson & Linde, Robbinsdale, Minn.
Huber Thresher Mfg. Co., Minneapolis.
Estate of P. D. Beckwith, Dowagiac, Michigan.
Lansing Motor & Pump Co., Lansing, Mich.
Towle Syrup Co., St. Paul.
Grand Crossing Tack Co., Grand Crossing, Ill.
Northwestern Port Huron Thresher Mfg. Co., Minneapolis.
Stoughton Wagon Co., Stoughton, Wis.
U. S. Wind Mill Mfg. Co., Batavia, Ill.
Davis Carriage Co., Richmond Indiana.
Lyle Corrugated Culvert Co., Lyle, Minn.
Empire Cream Separator Co., Minneapolis.
Gee Wiz Mfg. Co., Des Moines, Iowa.
Floyd A. Price, Bemidji, Minn.
The Only Mfg. Co., Hawarden, Iowa.
Economy Fuel Saving Co., Ortonville, Minn.
La Crosse Implement Co., La Crosse, Wis.
A. W. Allison, Janesville, Wis.
National Stone Co., Minneapolis.
W. H. Compton, Minneapolis.
Prussian Remedy Co., St. Paul, Minn.
Russell Wind Stacker Co., Indianapolis, Ind.
Oscillating Sleigh Co., Menominee, Wis.
Thomas & Smith, Chicago, Ill.
Peerless Brick Machine Co., Minneapolis.
Automatic Carrier Co., Juneau, Wis.
E. O. Borg & Sons, Madison, Wis.
James Leek, Minneapolis.
Miracle Pressed Stone Co., Minneapolis.
Olson & Richardson, Stoughton, Wis.
Janney, Semple, Hill & Co., Minneapolis.
American Asphaltum & Rubber Co., Chicago, Ill.
Williams Forest Machine Co., South Bend, Indiana.

REPORT OF THE FORAGE DEPARTMENT.

St. Anthony Park, Minn., Sept. 17, 06.

To the Honorable Board of Agriculture of the State of Minnesota:

I herewith submit report of forage department for the 45th Annual State Fair, held Sept. 3rd, to 8th, 1906. It is the purpose of the Agricultural Association to purchase only the best of forage and sell to the exhibitors at prices that will bear the costs of handling. The following report clearly shows there was but little profit.

RECEIPTS.

Cash deposit	\$2,018.95
Cash paid help	89.78
Premium credits	45.40

	\$2,154.13

DISBURSEMENTS.

Loftus Hubbard Elevator Co., feed	\$1,166.39
Tierney & Schaffer	144.13
John Coates	471.24
Hamline Feed & Fuel Co.	25.12
Loftus Hubbard Elevator Co., drayage	77.50
Sundry expenses	8.50
Labor	81.28
E. L. Peterson, Supt.	75.00

Cash profit	\$2,049.16
Outstanding bills	\$104.97
Coates' hay invoice.....	314.37

	16.50

	\$435.84

Respectfully submitted,

WM. M. LIGGETT,

Supt. Forage Dept.

REPORT OF THE POLICE DEPARTMENT.**D. S. Hall, Superintendent.****To the Board of Managers:**

Gentlemen: The force used in this department for the fair of 1906, was made up as follows:

90 Footmen.
10 Mounted men.
2 Court clerks.
7 Pinkertons.
15 Patrolmen from St. Paul:
5 Mounted men from St. Paul.
3 Detectives from St. Paul.
4 Footmen, from Minneapolis.
6 Mounted men from Minneapolis.
4 Detectives from Minneapolis.

It will be seen that 148 men were on duty during fair week to keep order and protect the patrons of the State Fair. The Court, Judge Gibbs, and the State Attorney, F. H. Griggs, while not a part of the force, occupy quarters with us and are practically in this department.

The force was about the same in number as last year, though more policemen from the cities. The pay for footmen was \$3 per day; mounted men \$5, including horses; a few more were put on duty a few days before and a number remained a few days after the fair. The patrolmen, mounted men and detectives, from the cities, make no charge to the society for their services, but are furnished rations and forage while on duty at the grounds. This department had practically no trouble with crooks, pickpockets, or thugs; the chiefs of police, in both cities and the Pinkertons, are to receive much credit for this condition. The face and actions of a crook would be spotted at once should they appear upon the grounds. They stay away; while a few "touches" were reported outside of the gates and on the cars, not a pocket was picked or person injured or insulted on the grounds. Very few arrests were made and most of those for small offences. The officers and men worked in harmony, good feeling prevailed in every branch of this department. Every man connected with this department did his duty faithfully and well; the amount paid out for the 92 footmen, 10 mounted men and 2 court clerks, from this office was \$2,666.75. The 7 Pinkertons, court, district attorney, and rations and forage for city police, were audited by the board, the vouchers and receipts for which are on file with the secretary of this society.

I was well supported by the board of managers, appreciate it, and hope I "made good," for 1906.

Respectfully submitted,
D. T. HALL,
Superintendent, State Fair, Police Department.

REPORT OF SUPERINTENDENT OF PRIVILEGES.

Lyman D. Baird, Austin, Minn., Superintendent.

SALES IN PRIVILEGE DEPARTMENT.

PLATTED SPACES.

Description.	Purchaser	Used For	Price Sold For.
Block 1—			
Lot 1—Forest Heights M. E. Church.	Dining hall		\$210.00
Lot 2—St. Anthony Park M. E. Church	Dining hall		205.00
Lot 3—St. Peter's Episcopal Church.....	Dining hall		175.00
Lot 4—Jacob Kranz	Dining hall.....		190.00
Lot A—E. E. Brothers	General stand and lunch		75.00
Lot B—Mrs. J. M. Doghrty	General stand and lunch		70.00
Lot C—H. W. Childs	General stand and lunch		90.00
Lot D—Bethel Church	General stand and lunch		65.00
Lot D—Berg & Borglin	General stand and lunch		90.00
Lot E—Berg & Borglin.....	Tintype gallery		70.00
Lot G—Mrs. Emma Woodworth.....	Dining hall		165.00
Lot H—Mrs. W. F. Roberts	Dining hall		165.00
Lot I—H. McKenzie	Postal photos		60.00
Lot K—R. V. Sheldon	General stand and lunch		60.00
Lot L—J. E. Sanberg	General stand and lunch		80.00
Lot M—H. J. Johnston.....	General stand and lunch.....		80.00
Lot N—P. P. Schuster	General stand and lunch		65.00
Lot Q—Mrs. Hannah Berrum.....	Dining hall		160.00
Booth A—Mrs. A. B. Allen	Lunch and general stand		55.00
Booth B—Mrs. J. N. Nauer	Lunch and general stand.....		50.00
Booth C & D—Mrs. O. E. Palmer	Lunch and general stand		110.00
Booth E & F—C. H. Sweatt	Lunch and general stand		110.00
Booth G—St. Paul Church of Ascen.....	Lunch and general stand		55.00
Booth H—Mrs. T. E. Witte.....	Lunch and general stand		55.00
Booth I—F. A. Cleall	Lunch and general stand		60.00
Booth J—C. L. Tilden	Lunch and general stand		60.00
Booth K—C. Dutiel	Lunch and general stand		65.00
Booth L—R. Zelenka	Lunch and general stand		75.00
Booth M—Mrs. H. Keen	Lunch and general stand		70.00
Booth N & O—J. N. Nauer	Lunch and general stand		100.00
Booth P—J. E. Champion	Lunch and general stand		50.00
Booth Q—Mrs. Chas. Babcock	Lunch and general stand		55.00
Booth R—Mrs. H. O. Helgerson	Lunch and general stand		55.00
Booth S, T, U, V—Clinton Ave. M. E. Church.	Dining hall		200.00
Booth W—B. Brown	Fruit		110.00
Booth X—D. Rossi	Fruit		65.00
Booth Y & Z—Wm. Berg	General stand and lunch		150.00
Booth &c—Mrs. Ursella	General stand and lunch		65.00
Block 2—			
Lot 2, 3 & 4—Mrs. H. J. White.....	Dining hall		510.00
Lot 5—Mrs. M. Welch	Dining hall		165.00
Lot 6—Central Christian Church.....	Dining hall		140.00
Lot 7—Westminster Presby. Church.....	Dining hall		115.00
Lot 8—Bethlehem Presby. Church.....	Dining hall		95.00
Lot 9—Mrs. Lou Shortt	Dining hall		85.00
Lot 10—Mrs. H. Johnson	Dining hall		100.00

Description.	Purchaser	Used For	Price Sold For.
Block 2—			
Lot 11—Trinity M. E. Church	Dining hall	100.00	
Lot 12—J. T. Brewer	Cider Mill and general stand...	50.00	
Lot 13 E. 35 ft.—Wm. Conlon	General stand and lunch	50.00	
Lot 14—H. P. Conrad	General stand and lunch	125.00	
Lot 17 & 18—H. W. Parsons	Dining hall	200.00	
N. $\frac{1}{2}$ lot 19—Harmony Camp No. 294 R. N. A.	General stand and lunch	50.00	
S. $\frac{1}{2}$ lot 19—Julius Rick	General stand and lunch	35.00	
Lot 20—C. J. Hoegaard	Dining hall	100.00	
N. 8 ft. lot 21—C. H. John	Lunch and general stand.....	25.00	
S. $\frac{1}{2}$ lot 21—Mrs. O. Jacques.....	Lunch and general stand	35.00	
Lot 22—United Spanish War Vet's....	Dining hall	100.00	
Lot 23—Louis Bertrand	Dining hall	100.00	
Lot 23 & 24—Lake St. M. E. Church..	Dining hall	200.00	
Lot 26—E. Skogstrom	Dining hall	100.00	
Lot 27—Mrs. M. Law.....	Dining hall	135.00	
Block 3—			
Lot 1, 2, 3—Maple Leaf Dairy	Dining hall	605.00	
Lot 4—St. Vincent Catholic Church...	Dining hall	120.00	
Lot 5 & 6—H. A. Maas.....	Dining hall	240.00	
Lot 7—C. W. Gerlach	Postal Photo gallery	120.00	
S. $\frac{1}{2}$ lot 8—W. M. Marshall	Hamberger and general stand...	60.00	
N. $\frac{1}{2}$ lot 9—J. F. Shortt	Photo buttons	60.00	
Bal. lot 8 & 9—Freeman & Wilson.....	Hamberger & Palmist	40.00	
Lot 10—Beck & Revoyr	General stand and lunch	120.00	
Lot 11—Hortenbach & Pauly	Merry-go-round	150.00	
W. $\frac{1}{2}$ lot 13—Edward E. Harwell	General stand and lunch	50.00	
E. $\frac{1}{2}$ lot 13—Mrs. Long & Kiley.....	General stand and lunch	50.00	
E. 12 ft. lot 14—Mrs. Edwards.....	Hamberger	25.00	
W. 8 ft. lot 14—A. Bramvich.....	Hamberger and general stand...	35.00	
Lot 15—R. H. Berryman	General stand and lunch	85.00	
Lot 16—Mrs. G. T. Brennan	Dining hall	100.00	
Lot 17—C. B Henson	General stand and lunch	150.00	
Lot 18—Mary Kelley	Dining hall	100.00	
Lot 19—Mrs. Esther Paulson	Dining hall	75.00	
Lot 20—Mrs. T. R. Shockency	Dining hall	100.00	
Block 4—			
Lot 1, 2—Mrs. M. Priebe	Dining hall	385.00	
Lot 3—Mrs. A. P. Dapron	Dining hall	150.00	
Lot 4—McKeen & Co.	Dining hall	150.00	
Lot 5, 6—Cooke & Toogood.....	Dining hall	300.00	
Lot 7—A. P. Drake	General stand and dining.....	215.00	
Block 5—			
Lot 0—J. S. Bucknell	Barber shop	25.00	
Lot 1—M. G. Kellogg	General stand	50.00	
Lot 2—C. O. Anderson	Store	35.00	
Lot 3—W. J. McCullenn	Store	35.00	
Lot 4—Marion Johnson	Refreshments	30.00	
Lot 5—St. Paul Bread Co.	Store	50.00	
Lot 6—Crescent Creamery	Dairy store	35.00	
Lot 7—W. C. Zumach	Lunch stand	35.00	
Lot 8—J. H. Maxwell	Lunch and general stand	35.00	
Lot 9—Mrs. M. W. Johnson	Lunch and general stand	35.00	
W. $\frac{1}{2}$ lot 10—Mrs. L. Haedge	Lunch and general stand	35.00	
E. $\frac{1}{2}$ lot 10—Mrs. Carter	Fortune telling	30.00	
Lot 11—W. C. Vaughn	Dining hall	50.00	
Lot 12—L. Bans & B. Oaksman	Dining hall	50.00	
Lot 13—Mrs. Donahue	Dining hall	50.00	
Lot 14—Mrs. Vina Wilgus	Refreshments	50.00	

Description.	Purchaser	Used For	Price Sold For
Block 6—			
Lot 1—Plymouth Clothing House	.....Advertising	.....	85.00
Lot 2—Mrs. J. Gilbertson	.....Lunch and general stand	.....	60.00
Lot 3—R. Champion	.....Lunch and general stand	.....	60.00
Lot 4—John J. Hoban	.....Lunch and general stand	.....	55.00
Lot 5—Applebaum & Rosenberg	.....Refreshments	.....	60.00
Lot 6—Chicago Bakery	.....Bakery	.....	60.00
Lot 7—Geo. Siebenbmuner	.....General stand and lunch	.....	55.00
Lot 8—J. A. Orren	.....General stand and lunch	.....	60.00
Lot 9—Hildah Holt	.....Refreshments	.....	60.00
Lot 10—W. M. Harcourt	.....Lunch and general stand	.....	75.00
			\$11,050.00

Purchaser.	Sold For.	Price Sold For.
Women's Relief Corps	Dining hall	\$130.00
Bert Brewer	Cider mill	40.00
Geo. Tremont	Toy balloons	150.00
E. W. Baker	Dining hall	220.00
W. B. Poudler	Hamberger and general stand	105.00
G. F. Powell	Hamberger and general stand	80.00
Luther Clark	Hamberger and general stand	60.00
Frank Sherer	Hamberger and general stand	60.00
A. J. Beck	General stand and lunch	60.00
J. N. Scott	General stand and soft drinks	60.00
R. F. Rippe	General stand and lunch	60.00
John Lenox and J. M. Freeman	General stand	60.00
L. L. Smith	General stand and lunch	60.00
Mrs. Wm. Lindsey	General stand and lunch	60.00
Samuel Martin	General stand	40.00
J. W. Taylor	General stand	60.00
J. W. Webster	General stand and lunch	60.00
L. C. Martin	General stand and lunch	60.00
F. D. Eastham	General stand	60.00
Frank Marucca	Fruit	60.00
Harry Graham	Ice cream cones	35.00
Geo. F. Lucas	Sale of whetstones	35.00
Geo. L. Hartsock	General stand	40.00
Olivet Cong'l. Church	Dining hall	105.00
John E. King	Grand stand	725.00
G. O. Weber	Score card	500.00
J. W. Taylor	General stand	25.00
Cox & Harris	Cigars and soft drinks	100.00
P. Adamson	Popcorn wagon	30.00
P. Adamson	Popcorn wagon	30.00
P. Adamson	Popcorn wagon	35.00
L. Simpson	Novelties	25.00
N. B. Ross	Novelties	25.00
Mrs. Skally	Novelties	25.00
Paul Ronyak	Soft drinks and cigars	25.00
Cogswell & Co.	Souvenirs	50.00
John Dunn	Soft drinks and cigars	30.00
J. H. Kinkel	Soft drinks and cigars	25.00
Arthur Whitman	Ice cream cones and popcorn	25.00
L. Snell	Lunch and general stand	25.00
Henry B. Senn	Ice cream cones, drinks & cigars	25.00
I. Rose	Novelties	50.00
P. Farnachy	Novelties	25.00
L. Simpson	Novelties	25.00
Mrs. LaRonde	Indian bead work	25.00
Johnston & Nankivill	Soft drinks	25.00
F. Marionall	Ice cream cones	25.00
C. Bondi	Monkey	25.00

Purchaser.	Sold For.	Price Sold For.
Mrs. R. R. Wilson	Soft drinks and ice cream	25.00
F. D. Brounstein	Soft drinks and fruit	25.00
Mayflower Lodge D. of H.	Lunch and general stand	35.00
M. C. Thiebaud	Lunch and general stand	45.00
Mrs. Hannah Berrum	Soft drinks and novelties	40.00
H. K. Carson	Lunch and novelties	75.00
G. E. Leslie	General stand	25.00
Mrs. Mary Gernens	General stand	25.00
Jos. Zignego	Ice cream and general stand	25.00
J. W. Taylor	General stand	25.00
Mrs. J. Garney	General stand and lunch	25.00
R. C. Earl	General stand	25.00
F. Bedford	General stand	25.00
Mrs. Geo. West.	General stand	25.00
P. Adamson	Popcorn and general stand	25.00
J. T. Brewer	Cider mill	25.00
H. Meyers	Sign painting	25.00
H. Perkins	Sign painting	25.00
Mrs. A. H. Mayo	General stand	40.00
Hamline M. E. Church	Dining Hall	400.00
Zierath & Zierath	General stands (4)	100.00
Woolson Spice Co.	Demonstrating	25.00
A. Goldshlager	Novelties	25.00
Mrs. Jacobs	Indian beadwork	25.00
Chas. F. Lee	Photo gallery and gen'l stand	50.00
The Minn. Medical Co.	Advertising	25.00
J. W. Taylor	General stand	50.00
Tony Sante	Popcorn & peanuts	25.00
J. T. Brewer	Cider mill	50.00
N. B. Ross	Novelties	25.00
Luce Land Co.	Advertising	50.00
Bert Brewer	Cider stand	50.00
Sam Fisher	Novelties	25.00
E. T. Holmes	Advertising	50.00
Frank Forrust	General stand	25.00
Frank Dold	Novelties	25.00
Fred Mosiman	Ice cream cones & soft drinks	25.00
F. Mosiman	Ice cream cones & soft drinks	50.00
Sam Moskovitz	Novelties	25.00
E. Labovich	Novelties and fruit	50.00
Chas. A. Holmes	Sale combination farm tools	25.00
L. Polakoff	Novelties	25.00
L. Polakoff	Novelties	25.00
L. Polakoff	Novelties	25.00
L. Polakoff	Novelties	25.00
J. Hendler	Novelties	25.00
J. Hendler	Novelties	25.00
J. Hendler	Novelties	25.00
J. Hendler	Novelties	25.00
E. L. Hyatt	Needle threader	25.00
D. J. McWamare	Magnifying glass and novelties	25.00
L. Polakoff	Novelties	25.00
John Taillfer	Lunch and soft drinks	25.00
Freeman & Holmes	Glass cutters and collar buttons	25.00
J. J. Fisher	Postal photo gallery	25.00
Jack Vulare	Hamberger and soft drinks	25.00
Anna Brunell	General stand	25.00
R. B. Carroll & A. W. Burg	Ice cream cones	25.00
C. W. Dees	Block puzzle	25.00
J. J. Hulse	General stand	25.00
M. C. Webb	Fortune telling (moved out)	25.00
M. E. Flanagan	Lunch (moved out)	10.00
Mrs. Lizzie Kinsman Wright	Ice cream cones & soft drinks	50.00
Mrs. Harry Handy	General stand	25.00

Purchaser.	Sold For.	Price Sold For.
B. E. Gregory.....	Fire works program.....	22.05
Salon Spring Waters.....	Vending machines	20.00
L. Polakoff.....	Novelties	25.00
Nelson & Johnson.....	Phrenologist machine (2 days).....	10.00
		\$6,132.05

MAIN BUILDING.

Shugo Tanaka	Japanese goods	\$115.00
Nutshell Syndicate	Novelties	30.00
John Z. Lewis.....	Novelties	30.00
C. J. Bansky.....	Novelties	102.50
Clyde W. Kuhn.....	Burnt leather	30.00
L. Polakoff.....	Novelties	60.00
D. W. George.....	Ice cream cones.....	60.00
Bradford & Co.....	Shell goods and novelties.....	235.00
Mrs. T. Olson.....	Lunch	35.00
Frank W. Anderson.....	Refreshments	35.00
Alfred Anderson	Demonstration	80.00
J. E. Lang.....	Glass engraving	50.00
Juergens Jewelry Co.....	Jewelry	102.50
Mrs. H. Medin.....	Ice cream	60.00
S. H. Hughes.....	Ice cream cones.....	70.00
John J. Daniels.....	Gopher traps	30.00
Frank Dold.....	Glass	60.00
G. E. Gilkey.....	Novelties	30.00
L. Bernstein	Jewelry and novelties.....	310.00
Geo. Payne.....	Soft drinks	37.50
Lauritzen Malt Co.....	Exhibit	30.00
J. H. Heisser.....	Novelties	30.00
H. Rabin	Jewelry and novelties.....	60.00
Mrs. Chas. Lindsey.....	Ice cream cones.....	30.00
Sam Moskovitz.....	Novelties	30.00
Sol. Flegelman	Druggist sundries	70.00
E. D. Ebey.....	Notion novelties and jewelry....	240.00
Spoerhase Bros.....	Egg beater and demonstration..	40.00
Wm. Switzer	Horoscope	30.00
Mrs. A. E. Teal.....	Soft drinks	55.00
A. L. Allen.....	Potato parer	30.00
L. Neller	Novelties	35.00
H. Anderson	Novelties	80.00
Nichols Expert School.....	Advertising	100.00
Nippon Art Store.....	Japanese goods	100.00
Kempien Womach & Co.....	Exhibit and sale condensed milk	100.00
G. J. Cohn.....	Novelties	50.00
H. A. Fowler.....	Burnt work and novelties.....	100.00
E. Mirras	Candy	150.00
B. J. Zeeman	Sale fur lined coats.....	60.00
Miss M. A. Whedon.....	Postal cards	25.00
G. W. Lawley.....	Sale of tops.....	25.00
Fred Swanson	Sale of sheet music.....	25.00
J. Vallender	Postal cards and souvenirs.....	50.00
A. H. Hendler.....	Novelties and souvenirs.....	65.00
Joseph Mantel	Glass engraving	50.00
		\$3,222.50

AGRICULTURAL BUILDING.

Joseph Auer	Hot taffy	\$35.00
H. M. Curtis.....	Soft drinks	25.00
Mrs. W. H. Laraway.....	Perfumes	25.00
Mrs. Cushman	Fruit nectar	25.00
J. A. Daniels.....	Lunch	50.00
L. J. Hurst.....	Sale of tops	25.00
		\$185.00

ANNUAL REPORT OF

WOMEN'S BUILDING.

Purchaser.	Sold For.	Price Sold For.
Marinello Co.	Toilet preparations	\$25.00
E. Mirras	Candy	100.00
West Hotel Curio Store.....	Curios	35.00
A. H. Felky	Refreshments	25.00
Miss M. A. Whedon.....	Sale burnt work and postals....	50.00
Juergens Jewelry Co.	Jewelry	75.00
Case Corset Co.	Sale of corsets.....	25.00
		<hr/>
		\$335.00

DAIRY BUILDING.

Chas. Alberg	Cigars and general stand.....	\$25.00
Wm. S. Jensen.....	Lemonade and buttermilk.....	50.00
A. L. Allen.....	Potato parers (two days).....	10.00
		<hr/>
		\$85.00

MANUFACTURERS' BUILDING

L. Polakoff.....	Novelties	\$30.00
F. Mosiman	Refreshments	50.00
W. S. Jensen.....	Lemonade	25.00
J. Handler.....	Novelties	25.00
		<hr/>
		\$130.00

STOCK PAVILION.

W. S. Jensen..... Exclusive \$175.00

Respectfully submitted,

LYMAN D. BAIRD,

Superintendent of Privileges.

Oct. 1st, 1906.

REPORT ON COLLECTION OF PRIVILEGES.**Pike.**

Monday	\$1,278.45
Tuesday	599.20
Wednesday	750.80
Thursday	796.85
Friday	556.30
Saturday	215.30
	<hr/>
	\$4,196.90

From platted spaces	\$11,050.00
From unplatted spaces	6,132.05
From main building	3,222.50
From agricultural building	185.00
From women's building	335.00
From dairy building	85.00
From manufacturers' building	130.00
From stock pavilion	175.00
From pike	4,196.90
From sale of team tickets.....	200.00
From collection of gas.....	493.00
From parcel checking	276.80
	<hr/>
Turned over to treasurer account privileges	\$26,481.25
Turned over to treasurer, tickets account for privilege tickets sold	674.33
	<hr/>
Net amount from official program.....	\$27,155.58
	<hr/>
	1,377.53
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	\$28,533.11

Respectfully submitted,
 A. C. PAGE,
 Collector of Privileges.

Oct. 12th, 1906.

UNITED STATES POST OFFICE, SAINT PAUL, MINNESOTA.

September 14th, 1906.

Mr. E. W. Randall, Sec'y, Minnesota State Agricultural Soc'y, St. Paul, Minn.

Dear Sir: Enclosed please find copy of the report of the business transacted at the postal station on the fair grounds this season. There was an increase of business in every detail and the station was patronized by over 11,000 people. At times the office was very badly crowded.

In order to better meet the conditions for next season, I would respectfully recommend the following improvements, none of which will be very costly but are absolutely necessary.

1. Remove the settee in the southeast corner and install in the space vacated another writing desk and a light. The desk space available is entirely inadequate.
2. Cover the windows in northwest corner of building with heavy wire netting, so as to eliminate the danger of theft from the outside.
3. Provide a small wire safety guard at the money order window.
4. Erect a sign at the sidewalk. The present sign is very little noticed and many people are unable to find the postoffice.

Very respectfully,
M. D. FLOWER,
Postmaster.

REPORT OF BUSINESS TRANSACTED AT THE FAIR GROUNDS STATION.
SEPTEMBER 1 TO 10, INCLUSIVE.

	Mail Received Pieces	Mail Delivered Pieces	By Carrier		Money Orders			Fees	Letters Registered Mailed Letters Special Delivery Letters
			Deliv'd	Collec'd	Sales	No.	Amount		
September 1	621	111	330	26	\$31.36	1	\$20.00	.10	3
September 2	267	79	175	27	30.85	1	26.90	1.61	14
September 3	282	2,077	312	54.20	18	100.23	15	3.10	8
September 4	424	1,836	193	307	412	70.08	19	659.00	2.50
September 5	409	2,001	286	384	386	62.32	25	1,098.75	3.91
September 6	680	2,365	714	287	55.05	19	912.45	2.88	12
September 7	536	1,734	493	162	69.01	15	822.00	2.91	13
September 8	423	1,207	111	126	47	30.24	12	.....	6
September 9	178	104	95	34	30.12	112	.....	.....	2
September 10	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	3,940	11,675	3,056	2,022	\$54.07	112	\$4,774.70	\$17.01	40
1905	3,659	7,803	1,569	1,175	371.72	95	4,223.02	15.67	38
1904	3,119	4,822	1,160	914	284.13	86	2,649.96	10.67	28
1903	2,291	3,634	554	215.54	67	2,256.66	8.78	31	50
1902	1,698	2,811	88	224.69	55	1,887.17	7.23	37	32
1901	1,400	2,379	.....	44.56	27	875.65	3.56	57	51

ANNUAL REPORT OF

REPORT OF SUPERINTENDENT OF GATES.
Outside Gates, 1906.

	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total		Total Day and Night
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
General admission	63,284	149	22,703	112	26,606	112	29,475	100	18,395	100	11,325	100	171,798	473	172,271
Night admission	2,185	75	2,301	7	2,660	4	2,659	16	1,725	36	1,811	16	1,416	16	16,124
General half-fare	7,551	16	2,385	7	2,299	30	16	16	346	36	18,691	18	18,691	27	18,718
Night half-fare	40	23	230	22	376	32	428	23	346	58	318	32	2,037	144	144
Season coupon	339	23	30	30	4,998	160	4,936	135	3,408	165	1,714	102	27,966	759	28,235
Railway general admission	9,221	98	3,689	99	165	1	163	162	3	118	2	48	943	6	28,726
Railway half-fare	287	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	949	.....	.....
Total paid admission	80,702	2,511	29,162	2,572	34,803	3,531	37,560	3,840	23,392	3,727	15,216	1,550	221,435	17,731	239,166
Season complimentary	1,566	75	1,011	200	1,097	234	1,339	174	1,123	310	1,111	204	7,247	1,197	8,444
One day passes	1,624	60	865	204	1,136	159	1,635	214	1,537	360	1,680	458	8,516	1,455	9,971
Badge slips	2,517	306	2,070	412	1,296	550	2,714	467	2,317	360	2,157	327	12,971	2,422	15,393
Helper's tickets	3,710	128	3,067	357	3,274	358	3,584	240	3,393	415	3,440	323	20,468	1,821	22,289
Total complimentary admn.	9,417	569	7,013	1,173	6,802	1,301	9,322	1,035	8,260	1,445	8,388	1,312	49,202	6,895	56,097
Total paid admissions	80,702	2,511	29,162	2,572	34,803	3,531	37,560	3,840	23,392	3,727	15,216	1,550	221,435	17,731	239,166
Total complimentary admn.	9,417	559	7,013	1,173	6,802	1,301	9,322	1,035	8,260	1,445	8,388	1,312	49,202	6,895	56,097
Sum total	90,119	3,080	35,175	3,745	41,605	4,832	46,882	4,935	32,252	5,172	23,604	2,862	270,637	24,626	295,263
Grand total of day and night	93,199	39,920	46,437	51,817	.....	.....	37,424	.....	26,466	.....	.....	.....	295,263	295,263	295,263

LESLIE G. FULLER, Auditor.

REPORT OF SUPERINTENDENT OF GATES.
Grand Stand, 1906.

	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
General admission	34,165	13,850	5,501	5,640	6,532	8,703	9,810	8,160	6,177	4,958	6,457	2,514	68,642	43,325
Reserved seats	2,836	1,512	1,272	1,044	1,089	295	2,024	1,580	1,179	1,493	1,632	527	10,082	7,451
One-day passes	593	275	167	200	247	110	732	492	590	426	782	653	3,111	17,543
Complimentary (weekly)	666	336	312	309	324	118	431	304	352	310	482	322	2,557	5,266
Badge slips	250	183	265	201	961	357	1,263	802	1,230	946	578	584	4,637	4,326
Total	38,510	16,155	7,517	7,394	9,163	10,533	14,250	11,338	9,528	8,192	9,931	4,600	83,949	58,262
Total day and night	54,665	14,911	19,746		25,588		17,720		14,581		147,211			

LESLIE G. FULLER, Auditor.

UNIV. OF MICH.

FEB 26 1908

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